THE SIXTY-FIRST YEAR.

Companion to the Almanac;

OR,

YEAR-BOOK

OF

GENERAL INFORMATION

FOR

1888.

PART I.

PERIODICAL COMETS, GREAT BRITAIN IN 1837 AND 1887,
THE ROYAL COMMISSION ON DEPRESSION IN TRADE,
THE NATIONAL POULTRY AND EGG SUPPLY,
THE TELEPHONE AND ACOUSTICS, HORSE BREEDING,
IMPERIAL OCEAN PENNY POSTAGE,
AND FOREIGN COLONIES AND DEPENDENCIES.

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS,
ART EXHIBITIONS, SCIENCE, MUSIC, SPORT,
LEGISLATION, STATISTICS, CHRONICLE AND
OBITUARY OF 1886-87.

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COMPANION TO THE ALMANAC

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PERIODICAL COMETS.

ALTHOUGH 200 years have now elapsed since the theory of the motion of comets was explained in the "Principia" (that work having been published in 1687), in accordance with which it was thenceforward understood that many of these bodies were probably moving in elliptic orbits round the sun and might be expected to appear regularly when in those parts of their orbits which were nearest him, even so late as seventy years ago only one comet was known to have actually reappeared. At the present time the number recognised as periodical is very considerable; the reason why it has been so remarkably increased in recent years being that the comets which move in ellipses of small eccentricity and return at short intervals are bodies of feeble luminosity, frequently requiring powerful telescopes to see them at all, and never presenting a brilliant appearance like many of those which make longer excursions into space and attract general attention when they return to the neighbourhood of the sun and of our planet, which is always at a comparatively small distance from him. Comets which require thousands or even hundreds of years to complete a circuit round the sun are seen for so small a proportion of their whole course that it is impossible to determine the orbits of these with very great accuracy, to ascertain their periods, or to identify them positively

with any previous appearances, particularly as the observations of centuries ago, on which our knowledge of their motions at such appearances is derived, were not sufficiently precise for this purpose. An interesting instance of this is the case of the splendid comet of 1556. Somewhat more than a century ago Dunthorne compared the elements of its orbit with those which had been calculated for the comet which made such a grand appearance in the summer of 1264 (the year of the battle of Lewes), and found that they were so similar as to suggest the idea that these comets were identical. More recently this matter was taken in hand by Dr. Hind, who considered, after making some very elaborate calculations, that the same body was really in question, and that it would return about the year 1860. Nearly thirty years have now elapsed since that date, and certainly no comet moving in the path of that of 1556 has appeared. We must conclude, therefore, either that the observations (European and Chinese) from which the orbit of the comet of 1264 was calculated were affected with some inaccuracies which led to an erroneous idea of its identity with that of the comet of 1556, or that the two bodies may be in fact moving along the same or nearly the same orbit but at a considerable distance from each other. The latter view is to some extent strengthened by the fact that the Chinese records contain an account of a comet seen in a year corresponding to A.D. 240, which appears to have been moving in a very similar path. Another comet, observed much more recently, is thought with great probability to be revolving in an elliptic orbit, the period of which is not much shorter than that surmised (as we have just seen) for the comet of 1556. We are now speaking of the one discovered by Antonio Colla* on the 2nd of June, 1845, which, though not very conspicuous, was easily visible to the naked eye. Its orbit was found to be very similar to that of one observed by Mœstlin and Tycho Brahe in 1596, so that it appears not unlikely that both refer to one comet (seen at two successive appearances) with a period of very nearly 250 years. This is made the more likely from the fact that comets were observed both in 1098 (at the very time when Antioch was taken by the Crusaders) and in 1347. Should one appear in 2094 moving in the same orbit, the probability will be great that all these appearances are of the same body, which when farthest from the sun is nearly seventy times as far from him as the earth.

* Formerly Director of the Observatory at Parma, where he died in 1857.

It is interesting here to remark that all the comets which revolve round the sun in very short periods (and which, as has been mentioned, are all inconspicuous bodies) move in the same direction as do all the planets, and in orbits of small inclination to theirs, whereas those of long periods move quite as frequently in the opposite direction, and in planes inclined at very large angles (sometimes very nearly perpendicular) to those of the planets.

Between the comets of very short and those of very long periods there are a few which move in orbits requiring somewhat more than seventy years to complete a revolution, and which when farthest from the sun, are at about the same distance from him as Neptune, the most distant known planet. One of these is a conspicuous object when it returns to the neighbourhood of the sun; and it was in reference to it that the first successful prediction of the return of a comet was made. The astronomer who did so, it need scarcely be mentioned, was the illustrious Halley,* who became the second Astronomer Royal at Greenwich in 1720. He made the prediction in question in 1705. Applying Newton's principles to the motions of comets, now considered to be moving like the planets in conic sections about the sun, he discussed the motions of all those bodies of this class of which sufficient observations were accessible, and finding that two, discovered respectively in August, 1531, and in September, 1607, were revolving in elliptic orbits very similar to that pursued by the comet observed by himself and others in the summer of 1682, he conjectured that all these were appearances of the same body moving round the sun (in the opposite direction to that of all the planets) in an elongated ellipse, a complete revolution round which occupied about seventy-six years. He was further confirmed in this view by the accounts of the remarkable comet seen in 1456, which, although no strictly astronomical observations of its course were made, appeared to have been in all probability moving in nearly the same manner, and was thus led confidently to predict another return of the same body in 1758. Generalising (somewhat too fast, as is often the case), he considered that all comets would by degrees be found to be moving in elliptic orbits and to return regularly to view, when they should come into those parts of their courses which were

* The Life of Halley is yet to be written. Prof. Rigaud (author of the Life of Bradley) had collected materials for it, but died in 1839 before he was able to arrange and complete it.

nearest to the earth and sun. "Unde," he says, "ausim ejusdem reditum fidenter prædicere, anno scilicet 1758. Quod si hoc evenerit, nulla amplius erit dubitandi causa, quin redire debeant cæteri." As regards the comet in particular whose orbit he thus calculated, it is well known that his prediction was fulfilled, that that body returned in the winter of 1758–59, again in the autumn of 1835, that it has always been called since the first of these returns by the name of the astronomer who predicted its reappearance, and that it has since been shown, with a degree of probability amounting almost to certainty, that it can be identified with many previous appearances, the first of which took place about eleven years before the Christian era.

Several subsequent attempts were made to identify comets as seen at more than one appearance, and to predict their future returns. Maskelyne (Astronomer Royal from 1765 to 1811) thought that the comets seen in 1532 and 1661 were identical, and that it would return in 1790. The Russian astronomer, Lexell, finding that a comet, which was discovered by Messier at Paris in the month of June, 1770, appeared to be moving in an ellipse of short period, predicted that it would return* after an interval of about five years and a half. But these expectations were not fulfilled; nor was it, as we have said, until about seventy years ago that other predictions of the returns of comets were made, one of which very soon proved to be successful. This was in regard to one discovered by Pons at Marseilles on the 26th of November, 1818. Encke, applying the resources of improved mathematics to the theory of the motions of this body, found that it was identical with one discovered in 1786 by Méchain, in 1795 by Miss Herschel, and in 1805 by Thulis and others. He found that its orbit was very short, and that it only required about three and one-third years to complete a revolution round the sun. Hence he predicted its return in 1822. This accordingly took place, the comet being first seen on the 2nd of June. But before this the returns of two other comets with periods nearly as long as that of Halley's had been predicted. One of these was discovered in 1812—also by Pons; but it was not until 1816 that its orbit was determined by Encke himself, who proved that the period was a little more than seventy years. It has been reserved to our times to see

* It is now known that the attraction of Jupiter, to which the comet afterwards made a near approach, prevented this return.

this prediction fulfilled—the returned comet being detected first on the 1st of September, 1883, by Mr. Brooks, at Phelps, in the State of New York. In 1812 it passed its perihelion on the 15th of September; at the subsequent return on the 25th of January, 1884.

Less than three years after the first discovery of the last-mentioned comet, or on the 6th of March, 1815, another was discovered by Olbers at Bremen, which passed its perihelion on the 20th of April, and was calculated to be moving in an elliptic orbit with a period of above seventy-two years, or a little longer than the other. It returned accordingly last autumn, being detected by Mr. Brooks, at Phelps, N.Y., on the night of the 24th of August, 1887, and passing its perihelion early in October.

We have, therefore, in all three comets which have periods amounting to somewhat more than seventy years; and all these (as already mentioned) recede from the sun when in aphelion or at their greatest distance from him to about the same distance as that of the orbit of Neptune, the most distant known planet. One of them, Halley's, as we have said, moves in a retrograde direction to that of the planets: the other two in the same direction as that of the planets, but in orbits the planes of which are inclined at very large angles to theirs, whilst the inclination of that of the orbit of Halley's comet to those of the principal planets is comparatively small.

We have gone back to 1812 and 1815 for the purpose of including all known periodical comets in our survey: we can now proceed with the rest, after 1818, in chronological order. A very fine comet* appeared in the summer of 1819, but as its orbit was parabolic we are not concerned with it here. But a few days before that, on the 12th of June, Pons (the most successful discoverer of comets there has ever been) discovered a small body of this class, which Encke's investigations afterwards showed to be moving in an elliptic orbit with a period of about five years and a half. It could only be observed in 1819 for little more than a month before its perihelion passage, which occurred on the 19th of July. Nor was it seen again until the year 1858, when Professor Winnecke re-discovered it at Bonn; at first he supposed it to be a new comet, but, on determining its orbit, he found

* It was discovered by Tralles at Berlin on the 2nd of July. That astronomer was born at Homburg in 1763, and died in London (whither he had gone to procure some scientific apparatus) in 1822.

that it was, in fact, identical with the discovery made by Pons nearly forty years previously. It is sometimes called Winnecke's comet, but Pons's seems a juster designation, as its period had been computed before Winnecke's investigation. It was observed again in 1869 and 1875, but not in 1864 nor in 1880, when its positions were very unfavourable for observation. At the last return, however, in the summer of 1886, observations were again secured of it; it passed its perihelion on that occasion in the month of August, and another return will be due early in 1892. Yet another comet was found in 1819, the discovery being made by Blanpain at Marseilles on the 28th of November. This comet, although faint, has recently become of considerable interest. Encke calculated that it was moving in an elliptic orbit of less than six years' period; but it was not seen again for many years. On the 4th of October, 1881, however, Mr. Denning, of Bristol, discovered (as he supposed) a new comet, which subsequent calculation showed was probably the long-lost comet of Blanpain; if so, it must have undergone since first discovered great disturbances in its motion from planetary perturbation, which considerably altered its path and increased the length of its period to about nine years. We may therefore expect to see this erratic traveller again in the year 1890.

In 1820 no comet approached the earth, or at any rate none were seen; in 1821 one only was discovered, which became visible for a short time to the naked eye, but was found to be moving in a parabolic orbit. In 1822 took place the first *predicted* return of Encke's comet, which has been observed at every subsequent return, the last of these occurring in the spring of 1885 (when the comet passed its perihelion on the 7th of March) so that another will be due next summer (1888). Its position was such in 1822 that it could only be seen in the southern hemisphere, where it was observed by Rümker at Paramatta, in New South Wales. In this year Pons discovered, on the 13th of July, a comet which was calculated by Encke to be moving in an elliptic orbit, but one of so great eccentricity as to require more than 5,000 years to complete a period. This comet was at one time visible to the naked eye, but never conspicuous. Not much shorter was the period of another comet discovered by Pons on the 15th of July, 1825, the orbit of which was calculated by Hansen to be such that a complete revolution would occupy more than 4,000 years. This comet was very conspicuous to the naked eye in October, and was observed with telescopes until July

of the following year, when it was last seen by Inghirami at Florence on the 8th of that month. But meanwhile a comet had been detected of which the subsequent history has made it very interesting. It was discovered by Biela (an Austrian officer) at Josephstadt in Bohemia on the 27th of February, and when first seen was a faint object. Its orbit was calculated by several astronomers, with the result that it was moving in a short ellipse, the period of which was only about six years and a half. Comparison of the elements with those of comets recorded in previous years showed that it had been first discovered by Montaigne at Limoges so long ago as the 8th of March, 1772; and that it was rediscovered, as a presumed new comet, by Pons, on the 10th of November, 1805. But as Biela discovered it at the return when the periodicity was detected, it is usual to call it Biela's comet, this being the usual rule, steadily adhered to by Encke, who always called the comet usually known as his own by the name of Pons. The astronomer who made the most elaborate calculations of the path of this comet (which he followed up at subsequent appearances) was Santini of Padua, who found that it passed its perihelion in 1826 on the 18th of March, and predicted that it would return to that position on the 27th November, 1832. This was fulfilled within a day, and Santini calculated that the comet would once more arrive at perihelion on the 23rd of July, 1839. Its position in the heavens, however, made it impossible to observe it on that occasion, but, at the next return, when it passed its perihelion on the 11th of February, 1846, it was seen as early as the end of November, 1845, and being well situated for observation was followed until the end of the following April. But it was doubtful on this occasion whether the term "it" was any longer applicable, for it had split or divided into two companion-comets, one more conspicuous than the other. Professor Hubbard of Washington showed by his investigations that the separation probably took place in the year 1844; and the pair of comets duly returned in the autumn of 1852. Since that time neither has been seen at all. The position would have been unfavourable in 1859, but not so in 1866, when another return was confidently expected. About this time, in consequence of the investigations which arose respecting the brilliant display of meteors in the middle of November, 1866, the remarkable discovery of the connection between comets and meteoric streams was made; and soon afterwards attention was called to the fact that the earth passed

through the orbit of Biela's comet about the end of November, and that meteors were often seen in considerable numbers at that time. A very brilliant display of these meteors was seen on the 27th of November, 1872, and it was thought that these formed in fact fragments of the disintegrated comet, the principal portion of which was near the earth on this occasion. As the comet's period is above six years and a half, circumstances would be favourable for a repetition of this display thirteen years after 1872, or in 1885, when two more periods of the comet would have elapsed, so that the earth and the principal remaining portion of that body might be again expected to be near each other. Accordingly another brilliant display *did* occur on the same day in 1885; and we may, therefore, look forward to a repetition of it on the 27th of November, 1898.

In 1829 Encke's comet returned, as it did also in 1832 when the first *predicted* return of Biela's (to which we have already referred) took place. In 1835 the former again returned; but that year was made more remarkable in cometary history by the return in the autumn of that most famous of all comets—Halley's. No comet was seen either in 1836, 1837, or 1839; and the only cometary event of 1838 was another return of Encke's. Several comets were observed in 1840, which appeared by calculation to be moving in elliptic orbits; but the ellipses were so eccentric that the periods were very long (the shortest considerably exceeding 300 years in length), and the comets cannot be identified with any others seen previously.

No comet was seen in 1841; two were observed in 1842, one of which was the returned comet of Encke, and the other was moving in a parabolic orbit, and of no special interest.

Early, however, in 1843 (on the 28th of February) a splendid comet made its appearance, which was followed during seven weeks. The tail was at one time 60° in length. This comet was remarkable for its close approach to the sun, which when nearest brought it within about 700,000 miles of his centre, or 300,000 miles of his surface. It has been conjectured to be identical with a comet which appeared in 1668, but the observations of the latter were too few and uncertain to enable astronomers to feel confident on this point, and indeed it would seem probable that the great comet of 1843 has a period of at least several hundreds of years. When another comet was found early in 1880, which also made a near approach to the sun, and the elements of its orbit were calculated to be very similar to those of

that of the great comet of 1843, the conjecture naturally arose that they were the same body with a period then amounting to about thirty-seven years, and it was thought that both might be identical with the comet of 1668, and that the period was rapidly undergoing diminution in consequence of the comet's close approaches to the sun. This seemed to be confirmed when another comet appeared in the autumn of 1882, which also passed close to the sun; indeed some alarm was felt at the exceedingly rapid shortening of the period which this would seem to imply, leading to the idea that the comet would very soon rush into the sun and produce an outburst of solar heat sufficient perhaps to destroy all life in the planetary system. Subsequent calculation, however, after longer-continued observations, showed that this comet of 1882 was moving in such a way that it would require about 750 years to complete its period round the sun; and reflection pointed out that after all great similarity or even identity of orbit is no proof of identity of the bodies moving in it. The probability, in fact, is that the comets of 1668, 1843, 1880, and 1882 are moving along the same or nearly the same orbit at considerable distances from each other in that orbit; and another member of the family seems to have been discovered in the year (1887) we are writing, which was first seen by Mr. Thome at Cordoba on the 18th of January, and very conspicuous in the southern hemisphere for a few days only, after which it ceased to be visible. To return to 1843; another periodical comet appeared in that year, being discovered by Faye at Paris on the 22nd of November. Calculation showed that it was moving in an elliptic orbit with a period of about seven and a half years, and it has been observed at every subsequent return, the last perihelion passage taking place in January, 1881 (but the observations on that occasion were all made about the end of the preceding year), so that the next will be due in the course of the year on which we are now about to enter (1888).

An interesting comet was also seen in 1844. It was discovered by De Vico, at Rome, on the 22nd of August, calculated to have a period of about five and a half years, and conjectured to be identical with one observed by La Hire, at Paris, in 1678, between which and 1844 there would have elapsed thirty of the periods calculated for it. It has not, however, been seen since, unless indeed (but this is doubtful) a single observation of a comet by Goldschmidt, at Paris, on the 16th of May, 1855, was

of it. A comet was discovered by Mr. Finlay, at the Cape of Good Hope, on the 26th of September, 1886, which was moving in an orbit very similar to that of De Vico's, so that at first it was thought they might be the same; but subsequent calculation showed that this theory was untenable. Finlay's comet has a period of about six and a half years, and may be expected to return in 1893.

A comet appeared in 1845, to which allusion has already been made. It is thought to be very probably identical with one observed by Tycho Brahe and others in 1596, and possibly with comets seen in 1098 and 1347, the period being calculated to be about 250 years. Towards the end of 1845 Biela's comet (see above) made another appearance, and was observed until the spring of 1846. In that year another periodical comet was discovered by Brorsen, at Kiel, on the 26th of February. It was a faint object, and was calculated to be moving in an elliptic orbit with a period of about five-and-a-half years, so that a return was predicted for 1851. It escaped observation, however, on this occasion, owing to its unfavourable position, but was re-observed in the spring of 1857. At the next return it was not seen, but was observed in 1868, 1873, and in the spring of 1879; it was due again in the autumn of 1884, but owing to its unfavourable position was not seen; another return will be looked for early in 1890. Prior to the discovery of this comet, in 1846, a comet was discovered on the 24th of January, which was computed to be moving in an elongated elliptic orbit, requiring nearly 3,000 years to complete a period.

The next *new* periodical comet was discovered by D'Arrest, at Leipzig, on the 27th of June, 1851. It was found to be moving in an elliptic orbit, with a period of about six and a half years, and was observed again (but only in the southern hemisphere, at the Cape of Good Hope) in the winter of 1857–8. In 1864 it must have returned again, but escaped observation, owing to its unfavourable position; it was, however, observed at the returns of 1870 and 1877, but not at the last (when it was calculated that it would pass its perihelion on the 13th of January, 1884), on which occasion indeed it was felt that the probability of its becoming visible was but slight. Another return will be due in the summer of 1890.

In 1852, as already mentioned, Biela's comet (which had ceased to be single before the previous appearance) was seen again as a double body, this being the last time it was seen,

unless the meteors of the end of November be considered to be fragments of it.

There is no occasion to recur again to the successive appearances of Encke's or of Faye's comet; and as this short article is intended to treat only of comets known to be periodic, we need make but the shortest possible reference to the magnificent comet of 1858, commonly called Donati's, from having been discovered (on the 2nd of June) by that astronomer at Florence. It was computed to be moving in a very long elliptic orbit, requiring about 2,000 years to complete a period; but it is quite impossible to identify it with even the smallest degree of probability with any other. Conjectures on that (as on many other subjects) are of no value; and it is well known now how utterly wide of the mark was the theory that the comet of 1680 (sometimes called Newton's, because in reference to it Newton first applied his principle of universal gravitation to the motions of comets) was identical with those A.D. 1106, A.D. 531, and B.C. 44, merely because the intervals between these appearances are nearly the same, and all the comets were very conspicuous objects. The period, however, of the comet of 1680 amounts in all probability to, not hundreds, but thousands of years; the comet of 1106 may have some connection with the great comet of 1843, that of 532 was probably an apparition of Halley's comet, whilst of the motions of that of B.C. 44 (seen about six months after the death of Julius Cæsar) we know absolutely nothing.

About the beginning of the year (1858) in which Donati's comet appeared, a small periodical comet was found by Mr. Tuttle, of New York. Its period is about $13\frac{3}{4}$ years, and it was shown that it had in fact been previously discovered by Méchain, at Paris, in 1790, so that it had returned four times since the first discovery without having been noticed. It was, however, observed again in the autumn of 1871, and also in 1885, when it passed its perihelion on the 11th of September. Another return will be due in the summer of 1899.

In the year 1865, on the 19th of December, a small comet was discovered by M. Tempel (now Director of the Arcetri Observatory, Florence), at Marseilles, the aspect of which presented nothing remarkable, though other circumstances afterwards showed that it was a most interesting body. In the first place it proved to be moving in an ellipse of such a nature that a revolution along it would be completed in little more than thirty-three years. In this ellipse the comet moves in a retrograde direction, being the

one of shortest period that does so. After the discovery of the periodic appearances and regular revolutions of meteoric showers, it was ascertained that this comet is in some way connected with the stream of meteors which come into view in the middle of November, and are especially conspicuous at successive intervals of thirty-three years, when the earth passes through that portion of the meteoric orbit where the meteors are thickly aggregated. Finally, it was noticed that the Chinese records give an account of a comet observed in a year corresponding to A.D. 1366, which very probably was an appearance of the comet discovered by Tempel exactly 500 years afterwards.

In 1867 M. Tempel discovered another comet, which proved to be periodic, the period being a little more than six years in length ; it was observed again in 1873 and 1879, but not at the last return in 1885, when it was unfavourably placed. The same astronomer discovered another periodical comet in 1873 ; its period is only about five and a quarter years, and it was observed again in the autumn of 1878, but escaped observation at the subsequent return towards the end of 1883. Another appearance of this comet will be due early in 1889. M. Tempel discovered also a comet in November, 1869, which afterwards proved to be periodic, though this fact was not ascertained until the comet had been re-discovered by Prof. Swift, Director of the Warner Observatory at Rochester, N.Y., in 1880, in consequence of which it is usual to call it Swift's comet. The period is only about five and a half years in duration, so that an unobserved return must have taken place in 1875. The comet was calculated to be due in perihelion again in the month of May, 1886, but, as in 1875, it was unfavourably placed and escaped observation. Another return will be expected in 1891.

M. Coggia discovered a small comet at Marseilles in November, 1873, which was proved by Professor E. Weiss to be identical with one discovered in the same place by Pons so far back as February, 1818, and to be moving in an elliptic orbit of short period. This probably amounts to about five and a half years, so that nine unobserved returns must have taken place between 1818 and 1873 ; neither has the comet been seen since Coggia's discovery in the latter year, although two more returns were due in 1879 and 1884 respectively.

In the autumn of 1880 a fine comet was discovered independently by several observers, the first being Dr. Hartwig, of Strasburg, who noticed it on the 29th of September. Its orbit

appeared to be elliptical with considerable eccentricity, and Professor Winnecke suggested that it was identical with comets seen in 1382, 1444, 1506, and 1569; if so, the period would be somewhat more than sixty-two years, and four unobserved returns must have taken place between 1569 and 1880. No great confidence, however, can be placed in this theory, because the observations at the earlier epochs named were not sufficient (in the strict sense of the word they were not observations at all, but merely afforded means for rough indications of the comet's course in the heavens) to determine the orbit with any accuracy on those occasions. If the comet reappears in 1942, the astronomers of that time will be able to decide the question.

Two new comets were discovered in 1884, which both proved to be moving in elliptic orbits, but neither of them had (so far as is known) been seen before. The first of these was found by Mr. E. Barnard, of Nashville, Tennessee, U.S., on the 18th of July. Its elements (like those of the comet already mentioned as having been discovered by Mr. Finlay in 1886) present a considerable resemblance to those of the comet of De Vico, calculated, as stated above, to be periodic, but never actually seen (with one doubtful exception) since the appearance at which it was discovered. But it is scarcely possible that the comets can be identical, as De Vico's could not, according to its period, be due in 1884. The other one of which we are now speaking was discovered by Herr Max Wolf at Heidelberg on the 17th of September. The period indicated by its motion at that appearance would be about six years, but this is subject to considerable uncertainty. On account of near approaches which this comet sometimes makes to the planet Jupiter, it is liable to great disturbances in its motions and alterations in some of the elements of its orbit.

The last comet we need mention was discovered by Mr. W. R. Brooks, at Phelps, N.Y., on the 22nd May, 1886. It passed its perihelion on the 7th of June, but although there can be no doubt that it is moving in an elliptic orbit, the observations that could be made were not sufficient for accurate determinations of the period, one astronomer calculating this to amount to nine years, and another to little more than six.

We do not purpose here to enter into any discussion respecting the physical appearances of comets or the theories of their origin and formation In many respects there is still much that is enigmatical about them, and doubtless the bodies reckoned

under the name of comets differ widely in their substance and constitution. Those which present the most magnificent spectacles are principally those of which the orbits, if elliptic, are ellipses of very great eccentricity. Our present article merely aims at giving a rapid survey of the history and motions of those which move in short elliptical orbits and return at regular intervals, so that they are designated under the term periodical comets.

W. T. Lynn, B.A., F.R.A.S.

GREAT BRITAIN IN 1837 AND 1887.

THE celebration of the Jubilee of Queen Victoria's reign has called emphatic attention to the immense changes that have taken place in the condition of the English realm within the half century.

Population.—The census of 1831 recorded the existence of 13,894,574 persons in England and Wales; 2,365,807 in Scotland, and 7,784,536 in Ireland. The sister-island has fewer people by three millions than at the beginning of the reign, but in England the increase has been nearly 90 per cent., and in Scotland nearly 60 per cent. The increase has not been evenly distributed, for whilst the counties of Radnor and Montgomery have actually receded, the increase has been 158 per cent. in Lancashire, and 143 per cent. in Yorkshire, 262 per cent. in Durham, 304 per cent. in Glamorganshire. Some of the Scottish counties show a high rate of increase, Lanark increasing 185 per cent., and Selkirk nearly quadrupling its population. The Lowlands generally show a large increase, but the Highlands have decreased, owing to the eviction of the crofters, and the conversion of their little holdings into sheep runs and deer farms.

The increase of population has been accompanied by a marked tendency to the gradual transformation of the British people into a race of town dwellers. This is curiously illustrated by the fact that in Ireland the only counties that show any larger population are Dublin and Antrim. The concentration of the inhabitants in urban centres has been more marked at each succeeding census. The urban population in England and Wales now includes 15,444,808 persons, whilst the rural population is 10,523,478. The gradual increase of the town population of England is shown by the following table:—

		Population.	Increase in preceding 10 years.	Per cent.
Town ...	1851	9,155,964	—	—
	1861	10,933,234	1,777,270	19·41
	1871	12,910,647	1,977,413	18·09
	1881	15,444,808	2,534,161	19·63
Country ...	1851	8,771,645	—	—
	1861	9,132,990	361,345	4·12
	1871	9,801,619	668,629	7·32
	1881	10,523,478	721,859	7·36

This calculation, however, only includes the great towns, but if we reckon as urban all the districts recognised by the Local Government Board as urban sanitary districts, we find the urban population in 1881 was 17,648,354, being more than double the rural population of 8,319,932.

At the beginning of the reign we have seen that the home population was 24,044,917, and in the Colonies and Dependencies there were not quite 4,000,000 more, with the exception of India, then held by the East India Company. Those directly under their rule numbered perhaps 90,000,000, and in the protected States about 40,000,000. The population of the British Empire may be thus stated :—

	Square miles.	Population.
Great Britain and Ireland	121,115	37,020,000
Isle of Man	220	54,089
Jersey	45	52,445
Guernsey	31	35,257
Heligoland	¾	2,001
Gibraltar	1¾	24,680
Maltese Islands	117	162,641
Cyprus	3,584	186,173
Empire of India	1,651,858	257,000,000
Bengal	156,564	66,691,456
North-West and Oude...	106,111	44,107,869
Punjaub...	106,632	18,850,437
Central	84,445	9,838,791
British Burmah	87,220	3,736,771
Upper Burmah...	190,500	3,500,000
Assam	46,341	4,881,426
Madras	139,900	30,868,504
Bombay	124,122	16,454,414
Berar	80,000	2,672,673
Native States (800 large and small) ...	587,138	56,300,000
Andaman and Nicobar	880	14,628
Straits Settlements	1,445	423,384
Singapore	206	155,000
Penang	107	190,597
Province Wellesley	270	
Malacca	659	93,579
Perak	7,949	118,000
Selanguor	3,000	46,568
Sungei Ujong	660	14,000
Cocos and Keeling Islands	9	400
Labuan Island	31	6,298
North Borneo	30,000	150,000
Hong-Kong Island, Kowloon and Lema ...	32	180,000
Port Hamilton	5	2,000
Ceylon	25,364	2,825,090
Cape Colony	213,636	1,240,000
Transkeian Territories	14,230	260,000
Basutoland	10,293	128,176
Bechuanaland	185,000	—
Walfisch Bay	450	—
Natal	24,000	424,495
Zulu Coast	—	—
West African Settlements	—	—
Sierra Leone, &c.	3,000	60,546

	Square miles.	Population.
Gambia	21	14,150
Gold Coast Colony	16,650	520,000
Lagos, &c.	73	75,270
Niger Districts...	—	—
Mauritius Island	708	370,766
Rodriguez Island	350	16,000
Seychelles and Amirante		
Chagos and Oil...		
Maldive Islands	—	—
Dominion of Canada	3,470,392	4,750,000
Ontario	144,600	1,973,228
Quebec	193,355	1,359,027
Nova Scotia and Cape Breton Islands ...	21,731	440,572
New Brunswick	27,322	321,233
Prince Edward Island	2,133	108,891
Manitoba	73,720	130,000
North-West Territories	2,553,337	56,446
British Columbia and Vancouver	390,344	60,000
Newfoundland	40,200	193,124
Labrador	—	20,000
British Guiana...	109,000	264,710
British Honduras	7,562	27,452
Bermuda Islands	41	14,888
Bahama Islands	5,794	45,000
Leeward Islands	722	119,546
Windward Islands	635	114,000
Jamaica...	4,193	580,804
Turks and Caicos Islands	223	4,778
Barbados	166	171,860
Trinidad	1,754	153,128
Ascension Island	35	200
St. Helena	47	5,059
Tristan D'Acunha	18	100
Trinidade Islands	9	15
Falkland Islands	6,500	1,553
South Georgia...	1,570	nil.
New South Wales	310,700	981,200
Victoria	87,884	1,009,753
South Australia	903,690	312,590
Queensland	668,497	326,916
Western Australia	1,060,000	35,186
Tasmania	26,215	133,791
New Guinea (part) and Isles...	88,457	137,500
Norfolk Island	19	300
Lord Howe Island	5	20
New Zealand	104,403	626,517
Chatham Islands, &c...	377	1,000
Kermadec Islands	100	—
Fiji Isles	7,740	127,444
Rotumah Isles	310	2,409
Tonga Isles	385	23,000

Consequent upon this increase of population in Great Britain there has been a growth of the great towns. London is fast becoming the most interesting of the European capitals, and is attracting that central attention which was once the due of Paris. The Metropolis has increased not only in size, but in picturesque quality ; in the importance of its public buildings, and in the attractiveness of its streets and marts. Manchester has been

to a large extent rebuilt in the present reign, and its great Town Hall, erected at a cost of more than a million pounds, is but an emphatic mode of expressing the feeling that is felt also in Birmingham, Liverpool, and the other great towns. The citizens are proud of their hive of industry, and rejoice in the external symbols of wealth and prosperity. The great English towns have also shown an interest in intellectual culture, and the public libraries, art galleries, and museums are amongst the first institutions to which the attention of the visitor is directed. The growth of population has been so rapid that in many cases the development has been quicker than that of the capacity for dealing with it. If in 1837 a man had foretold the rate of progress upon which the nation was entering, he would have been regarded as a dreamer. It is not just to reproach those who have gone with not making provision for needs they could not foresee, or for neglecting to guard against evils they did not anticipate. What might have been done with ease fifty years ago may now be a matter of great difficulty. This has to be borne in mind when we lament the slowness of sanitary reform, the polluted state of so many rivers, and the continuance of nests of vice and disease in the rookeries of every great town.

Growth of Wealth.—The wealth of the country has increased in a marked degree. Dr. Robert Giffen has calculated the income-tax assessment of 1887 at 630,000,000*l.*, whilst in 1837, had the tax existed, the amount liable would have been not more than 270,000,000*l.* The revenue has risen from 60,000,000*l.* to 90,000,000*l.*, whilst the number of articles contributing to the revenue has been steadily reduced. A portion of the revenue is the result, not of taxation at all, but of the trading monopolies vested in the Government. The income of the Post Office has risen from 1,500,000*l.* to 10,000,000*l.* The National Debt has fallen from 820,000,000*l.* to 740,000,000*l.*, and the annual charge from 28,000,000*l.* to 22,000,000*l.* Side by side with this diminution in imperial indebtedness there has been a steady growth of local debt, and consequently of local taxation, which has risen from 14,000,000 to 43,000,000*l.* This increase is to a large extent the payment that has to be made for the elementary education of the people, and for the securing of those sanitary methods without which life in great towns would be impracticable. Whilst it would be rash to say that there has not sometimes been reckless or foolish expenditure, yet in the works for drainage, sewerage, water supply, &c., there is on the whole

ample evidence of "value received" by the community in return for the large and growing expenditure.

Agriculture was in a depressed condition in 1837, and a series of bad harvests has resulted in a corresponding depression in 1887. There has been a gradual transformation of a large area from agriculture to grazing. Sufficient encouragement has not been given to fruit-growing, but the tendency has been to convert England from a farm into a grazing ground and market garden. Perhaps of all our industries agriculture is in the least satisfactory condition.

Manufactures have thriven. The cotton industry was in a depressed and gloomy condition in 1837. The raw cotton imported in 1840 amounted to 592,000,000 lbs.; in 1885 it was 1,425,816,336 lbs. The spindles have increased from eighteen millions to six hundred millions. About half a million persons are employed in the cotton factories. In considering this rate of increase the great loss to the trade during the Cotton Famine has to be taken into account. The loss to all parties by the calamity was estimated at 66,225,000*l.* The value of cotton yarns and manufactures exported in 1830 was 19,428,000*l.*, and in 1885, 70,976,887*l.* The iron trade produced 1,248,781 tons of pig-iron in 1839, and in 1882 reached the enormous figure of 8,536,680, the highest production yet reached.

Foreign Trade.—The exports of British and Irish produce fifty years ago averaged 45,000,000*l.*, and have increased 400 per cent., being now about 220,000,000*l.* Some of the figures are exceedingly remarkable; thus where one million tons of coal was exported fifty years ago, we now export 24,000,000 tons. "The entries and clearances of shipping in the foreign trade averaged about 1837 very nearly 3,500,000 tons per annum each. Now the annual average is about 32,000,000 tons per annum, or nine times the figure of fifty years ago—an increase accordingly of 800 per cent. The increase in the mercantile marine of the United Kingdom, by which most of these entries and clearances in the foreign trade are affected, as well as a large amount of other work done, is equally remarkable. Fifty years ago (1840) the tonnage of vessels belonging to the United Kingdom was about 2,770,000 tons only. And this was a sailing tonnage only, the tonnage of steamers being only 88,000, a merely nominal quantity. Now the corresponding figures in round numbers are: sailing tonnage, 3,400,000 tons; steam tonnage, 4,000,000 tons; the equivalent of the whole in sailing tons, reckoning one ton of

steam shipping as equal to four tons of sailing vessels, being very nearly 20,000,000 tons, so that the increase in the mercantile marine in the fifty years, measuring by efficiency, is about 600 per cent."

Free Trade.—The increased wealth and prosperity of the country has been due to a radical change in its financial policy. The early years of the reign were marked by continually recurring deficits in the national budget. Three-quarters of the revenue was raised by indirect taxation, and the collection of these imposts necessitated the most minute and vexatious interference with industry. The Customs' tariff touched 1,200 articles, and the corn duty was avowedly intended to benefit, not the national exchequer, but the landowners, by forcing the nation to pay a higher price than that for which they could buy foreign corn. It has been said that the bonus to the home producers was eight times as great as the amount the corn duty brought into the exchequer. The net result was an enormous addition to the price of food, and a continual, irritating, and harassing interference with the processes of industry. The repeal of the Corn Laws, important in itself, was also the symbol of a change of policy, and thenceforward the object of such duties as remained was revenue and not "protection," the name given to those arrangements by which the entire community pays an enhanced price to certain sections of the nation in order that they may have an unfair advantage over their competitors.

National Defences.—When Queen Victoria came to the throne the Army was 9,619 privates below the regulation establishment, and exclusive of officers numbered nominally 111,200 men, or really about 101,580. These figures include not only the troops at home but those in India and the Colonies. The feeling as to the dangers of a standing army was strong, but the necessities of colonial protection and of holding the Empire have led to a large increase in the armed force. The army had in 1885 a total of 198,064 officers and men. To this must be added the calling into existence of the Volunteers, a body of men who have no parallel in any other country of Europe, and whose spontaneous action has done much to reduce whatever physical disadvantage may be supposed to arise from the absence of compulsory service. It is estimated that there are about 800,000 men who have passed through the Volunteer ranks, whilst 226,752 are now enrolled. When the Great War ended in 1815, the army numbered about 220,000 men. The conditions of military service

have greatly improved, flogging has been abolished, recruits are more frequently drawn from a higher class, and a greater number rise from the ranks. The following table has been constructed by Lord Wolseley:—

	Officers not included.		
	1837.	1870.	1886.
Regular Army:			
At home...	46,300	84,500	101,700
Abroad	55,200	85,500	102,200
Reserve for the Regular Army:			
First-class Army Reserve	non-existent	2,100	46,700
Second-class Army Reserve		18,500	5,800
Militia Reserve...		26,400	31,000
Yeomanry	18,000	14,000	10,900
Militia	non-existent	77,800	98,300
Volunteers		193,800	215,000
Totals (round numbers)... ...	119,500	502,600	611,600

There have been great changes in the navy also. The ships in commission in 1837 were 196 in number; there are now 234, and the men have increased from 26,500 to 61,400. There has been a change from sailing vessels to steamers, from wooden vessels to armoured vessels, from many light guns to fewer guns of tremendous power. The cost of the navy was 4,419,700*l.* in 1837, and last year it was 12,741,000*l.* The press-gang, by which men were really kidnapped, has been abolished, and the navy is now supplied from the training ships. The naval reserve contains about 26,000 men.

Railways.—In 1837 there were but 200 miles of railway in the United Kingdom, and the number of passengers was 9,937; in 1885 the length of line was 19,169, and the passengers, excluding season ticket holders, 697,213,031. *Bradshaw* is the visible sign of railway progress, as its first number, issued in 1839, consisted of only six small pages instead of the 400 large pages that are now necessary.

Shipping.—The tonnage of British shipping has enormously increased. In 1836 the steam vessels numbered 600, and had a tonnage of 67,697; in 1885 the number was 6,644, and the tonnage was 3,973,483. The sailing vessels in 1836 were 19,788 in number, with a tonnage of 2,282,053, and in 1885 there were 17,018, with a tonnage of 3,455,562.

Postal and Telegraphic Communication.—The year 1837 saw

the publication of Sir Rowland Hill's famous pamphlet on "Postal Reform," which led to the establishment of the penny post—a system which had the strenuous opposition of the officials of the old Post Office, but which has proved one of the greatest boons, socially and commercially, that the kingdom has ever received. The number of letters delivered in that year was about 80,000,000; the number now is about 1,400,000,000. The Penny Post, tried first in London, was extended to the whole of the country in 1840. This was followed in 1855 by the Book Post, and in 1883 by the Parcel Post. Post Office Savings' Banks date from 1861. Postal Orders were first issued in 1881, and Postcards in 1870. The practical Electric Telegraph dates from 1837, but its early progress was not rapid. Submarine Telegraphy began in 1857, but the breaking of the cable postponed until 1865 the final accomplishment of instantaneous connection between the two hemispheres. The purchase of the telegraphs by the State, although strongly opposed, has been productive of great good. The number of messages each year is over 50,000,000.

The Condition of the Working Classes is the real test of the prosperity of a country. It is certain that the number of income-tax payers is yearly increasing, and therefore is annually recruited from the class below. There were 107,000 assessments over 150*l.* in 1843, and in 1880 there were 320,000. Whilst a certain class of thinkers insist that the rich are getting richer and the poor becoming poorer, there appears to be no reason to doubt that the working classes have shared substantially in the progress of the nation. Mr. Robert Montgomery has estimated that wages in the Manchester district have risen at least 40 per cent. Whilst the unskilled labourers have not greatly increased, the artizans and skilled workmen are now in far greater numbers than they were half a century ago. The masses of the people are better fed, better clothed, and better housed than when Queen Victoria ascended the throne. There is still an abject and poverty-stricken residuum, but the greater social sympathy with the poor obscures the fact that relatively to the mass of the population it is decreased and decreasing. There has been considerable discussion on this question, but the advocates of the working classes perhaps hesitate to admit the full extent of the amelioration lest it should afford arguments for the reduction of their present advantages, but its reality is evidenced in many ways. The deposits in the savings banks, the prosperity of the co-operative associations, the increase of the friendly societies,

and their gradual approximation to financial soundness corroborate the data as to the increased expenditure upon the necessaries and luxuries of life. With respect to food, there is good reason to think that increased cost has not always been accompanied by increased efficiency. But if the artizan has not been wise in discarding oatmeal porridge and brown bread for white bread and tea, yet on the whole his dietary has been greatly extended and usefully varied by the introduction of many fruits and cereals. If it is unhappily true that intemperance has been an evil drain upon the resources of the working classes especially, it is equally true that the temperance reformation sprang from the artizans, and has had the most beneficial effects upon the wage-earners. They can now meet the masters on far more equal terms. Six Dorchester labourers were transported in 1834 for combining together for the improvement of their position. The handloom weavers lived on the verge of starvation, and the mill hands were without the protection of the Factory Acts. Children went to work in the mills and the mines at the age of eight, and sometimes even at four and five years old. Women worked underground, and drew the wagons as though they were beasts of burden. Ill-fed and overworked, the despair of the working people found expression in fierce bread riots and machine-breaking. The Ten Hours' Bill was not passed until 1847, and was the result of a prolonged and bitter struggle. Some of the opponents were honestly afraid that the intervention of the State would lead to worse diseases than it would cure, and others it may be supposed were selfishly indifferent to the suffering and wrong on which their wealth was based. The principle of the Factory Acts has now been applied to many industries. The latest development of the legislation for the protection of the worker is the Shop Hours' Regulation Bill, 1886. The co-operative societies, with yearly sales of over thirty millions sterling, are a growth of the present reign, and whilst so far they have practically limited their operations to distribution, they are gradually turning their attention to production. The trade unions had their existence barely tolerated in 1837, for although the combination laws were repealed in 1825, the unions were without protection for their property, and had no remedy against dishonest agents. It was not until 1846 that the unions were exempted from the operations of the Corresponding Societies' Act unless it were set in motion by the Government of the day. The inquiry into the operation of trade unions by a Royal Com-

mission was probably not undertaken in a friendly spirit, but though the outrages at Sheffield and Manchester shocked the public, it was acknowledged that the unions generally were free from the taint, and in 1859 legal protection was given to their funds. Successive Acts have since fully acknowledged their rights, and the trade unions, once so roundly denounced, are now acknowledged to be of great public service and utility. The old idea that they existed only to promote strikes has disappeared. "They maintain their own poor," says Mr. Mundella, "succour and sustain their sick, bury their dead, keep the aged and infirm members, and give a lump sum of, in most cases, 100*l.* in cases of total disablement." In 1837 the law courts decided that an employer was not liable for injuries to a workman resulting from the neglect of others in the same employment. The practical injustice to the workmen is evident, and the Employers' Liability Act of 1880 has established the contrary principle. The Miners' Permanent Relief Funds seek to attain the same object of industrial assurance by the joint contributions of employers and employed. The progress of the working classes may be tested by the march of political enfranchisement. When Queen Victoria came to the throne the Reform Bill of 1832 had, indeed, corrected the grosser anomalies of the old system, but the bulk of the people were still without votes. The claims of the Chartists for manhood suffrage, vote by ballot, annual parliaments, payment of members, abolition of property qualification, and equal electoral districts were regarded as madness, and yet many of them have since been conceded. Whilst the name of manhood suffrage is avoided, the later Reform Acts have virtually established the thing, and large sections of both political parties are pledged to the extension of the parliamentary franchise to women also, who now have the municipal vote. Still another test is supplied by elementary education. The first State grant was made in 1834, and amounted to 20,000*l.* The expenditure in 1886 was 3,302,772*l.*

The dwellings of the poor have greatly improved, however much they may still, in too many instances, fall below the proper standard of decency and comfort. In 1840 there were 39,000 persons in the cellar-dwellings of Liverpool, and in every great town there was a mass of the poor herded together under conditions that were highly detrimental to health and morality. The action of the local authorities has greatly mitigated these evils, though much still remains to be done. To these indications

of social changes it may be added that there has been a great quickening of the religious life of the nation at all events in its external symbols. Churches have been multiplied by every denomination, and there has been a corresponding increase in their social agencies. In the Church of England the benefices have risen from 10,718 to 13,896, and the dioceses have been increased by six at home, whilst in the rest of the Empire they have risen from eight to sixty-three, without counting the thirteen missionary bishops. There has been a corresponding advance in the numbers and activity of the great Nonconformist bodies. The Church of Rome has now 2,522 priests where it had 610. The Kirk of Scotland was rent by the disruption of 1843 into two great Presbyterian communities, each of which has probably given a healthy stimulus to the activity of the other.

Legislative Changes.—Some important changes in the law have been incidentally named, but others of equal importance have to be mentioned. The Poor Law Act of 1834 remedied the grossest abuses of the old system, and by the policy of reducing to its lowest possible minimum the amount of out-door relief, the labourer gained in independence, and his wages rose when they ceased to be supplemented from the parish chest. Many amendment Acts have since been passed, but they do not disturb the general principle of our English Poor Law system, which recognises every man's right to live, but does not undertake to provide State workshops for those whose industry is not needed by private industry. The Public Health Act of 1848 was the beginning of important sanitary legislation, of which the Artizans' Dwellings Acts of 1868, 1875, 1879, and 1882, are amongst the latest development. Various Acts have been passed for the better organisation of the police force, and the prisons have been withdrawn from the county authorities and placed directly under the control of the State. Compulsory church rates have been abolished ; the tests which excluded Dissenters from the Universities have been done away with ; the Jews are no longer excluded from Parliament ; and the long and unedifying wrangle over Mr. Bradlaugh has come to an end, which will probably ere long find its natural complement in the abolition of the Parliamentary oath. There has been a gradual improvement in the position of women. The Divorce Act, 1857 ; the Married Women's Property Acts, 1870 and 1882 ; the Infants' Act, 1886, and the Matrimonial Causes Act, 1878, have contributed towards giving the wife and mother equal rights with

the husband and father. Previously the law had carefully deprived the woman of all rights after marriage. Rich women were protected to some extent by the elaborate machinery and settlements, but married women of the lower class, and indeed very largely of the middle class, were entirely at the mercy of an unprincipled or improvident husband. The changes in the land laws, although not so striking as in other directions, have been important, but the changes have been in the direction of removing the restrictions on the tenant-for-life and limited owner. In 1887 the Conservative Government introduced a measure for the abolition of the custom of primogeniture, the prohibition of entail, and the granting of an indefeasible title. The farmer is assured of compensation for improvements by the Agricultural Holdings Act, 1883. If the Poaching Act, 1863, was somewhat retrograde, the Ground Game Act of 1881 gave the farmer a power of protection that he has not failed to employ. The Liquor Traffic has been the object of a large amount of attention at the hands of the law makers, and the restrictions placed upon the sale of intoxicants have contributed to the progress of temperance. At the present moment the House of Commons is pledged to the principle of "local option," by which the control of licences is to be entrusted to the particular community interested. Scotland, Ireland, and Wales have each Sunday Closing Acts. The taxation on spirits has been raised, that on tea has been lowered. If we have had better laws we have also had a better administration of the law. The restriction of capital punishment, the abolition of transportation, the improvement in the treatment of prisoners, and vast changes in the machinery of the law, have made life and property far more secure and justice far less uncertain than it was fifty years ago.

It would be easy to multiply details of the changes that have occurred between the years 1837 and 1887. Not the least significant fact is that instead of 308 newspapers there are now about 2,135. Enough has been said to show that there has been a complete transformation of the country. Whilst many political institutions retain their old form, they have been profoundly modified in spirit. The masses of the people have been entrusted with political power, and it cannot be said that they have shown themselves less patriotic or less capable of sound judgment than their predecessors. There are thinkers who look with apprehension on the democratic mould into which political life is now run, but the spread of popular education has probably made the

least intelligent voter of to-day as fully competent as the ten-pound householder, or the holder of any of the miscellaneous franchises by which it was preceded. The dangers of democracy —since every form of Government has its special liabilities to abuse—may be safe-guarded in the elementary school. In the organisation of the social life of the nation there has been a constant endeavour to appropriate the best elements of two systems usually regarded as antagonistic if not mutually destructive, the central and the local. The bureaucratic method has never taken root here, and is opposed to the national spirit and traditions. On the other hand, local government suffers from ignorance and restricted experience. In the poor-law, education, and sanitary matters, whilst there is much left to the local option of each district, there is a central supervision upon certain definite principles. Whilst in commerce we have absolute freedom of trade, there has been considerable interference with individual action in regard to the processes of manufacture. Where individuals are powerless to protect the reasonable rights of life the legislature has not hesitated to protect them. Looking back over the fifty years of Queen Victoria's reign, we have a record of increased wealth and an unparalleled extension of territory. The people have been brought within the pale of the constitution; old industries have been widely extended, and new ones created. The best test of national prosperity is the condition of the masses of the people. These in 1887 have greatly bettered their position. Their food is cheaper and more plentiful as well as more varied. Their educational facilities are greater. Their homes are healthier. Their lives are longer and better worth living now than fifty years ago.

WILLIAM E. A. AXON.

Note.—A valuable collection of information as to the fifty years' progress between 1837 and 1887, is contained in "The Reign of Queen Victoria," edited by Thomas Humphry Ward, London, 1887; 2 volumes.

THE ROYAL COMMISSION ON DEPRESSION IN TRADE.

THE Royal Commission which was appointed to inquire into the depression of trade and industry came to the conclusion that it would not be desirable to examine witnesses from every separate branch of industry in the country; in accordance with this conclusion they fixed upon four of the most important and typical industries—the iron and coal trades, the textile industries, agriculture, and shipping. Their reasons for this selection are perhaps worth giving.

"The iron trade afforded an example of a commodity, the raw material of which is, to a very large extent, found within the limits of our own country, and in the manufacture of which the cost and efficiency of labour are considerations of primary importance.

"In the textile industries on the other hand the raw material is not only almost wholly imported from abroad, but also forms the principal element in the cost of the manufactured article.

"In agriculture we had to consider the most important industry in the country, whether we regard the amount of capital embarked in it, its direct interest to every member of the community, or its general influence on our national prosperity.

"Finally, in shipping we had an instance of an industry which is necessarily very intimately connected with the general prosperity of the trade both of this country and of the world at large, and which, therefore, seemed likely to afford valuable indications of the extent and intensity of the depression. The shipbuilding industry is also one which gives employment to a very large amount of labour, and it was understood to be itself in an exceptionally depressed condition."

The Commissioners found that among those connected with the iron trade there was a practical unanimity as

"to the nature and extent of the depression which they all asserted to exist. Although the production of pig iron in this country has, with some slight variations, steadily increased, with the result that in the year 1884 the make was 31 per cent. greater than in 1870, yet during the same period the quantity produced by other nations increased nearly 138 per cent. Sir L. Bell expressed the opinion that this failure to maintain our proportion of the iron trade of the world was not due to the superior quality of the iron produced or, to any great extent, to the greater cheapness of labour in foreign countries, but to the fact that there had been a greater expansion in the demand for iron on the Continent and in the United States than in this country, and that the protective tariffs in those countries tend to exclude importations from abroad and thus artificially stimulate the home production."

What was found to be the case in the iron trade was found equally in the coal trade and in the textile industries.

Perhaps one of the most telling facts which goes to show the existence of the depression, and which crops up again and again in the report, is that of the increase of the volume of trade

accompanied by a diminution of profit and growth of foreign competition, and it is remarkable and significant that the increase in the consumption of wool in this country during the years 1876–1884 was only 3¼ per cent., compared with an increase of 45 per cent. in the United States and some leading European countries.

According to the Commissioners little divergence of opinion was shown as to the cause of the depression in our agricultural industry, and the serious effect which that depression has produced upon the home trade of the country. The main factor of the agricultural position is the extreme lowering of prices brought about by the extension of American farming. It is generally agreed that the depression in agriculture in the first instance mainly arose from bad seasons, but the low prices realised by agricultural produce must now be regarded as the cause of the distress. The rise of rents which has taken place during the last thirty years, together with the pressure of rates and taxes, is, according to Sir James Caird, responsible for many of the agriculturist's troubles, which it is to be hoped will be alleviated in some degree by a re-adjustment of taxation, and a better regulation of railway rates.

The evidence given on behalf of the shipping industry showed that the volume of trade carried in British vessels has not fallen off, but that the tonnage built in recent years has been in excess of requirement, and so trade profits have been much reduced, while owing to the opening of the Suez Canal our *entrepôt* trade has fallen off.

The result of the inquiries made to our representatives abroad went to show that commercial depression has not been so widespread as has sometimes been supposed. In Austria and Germany so remarkable has been the growth of industrial enterprise, that the effects of falling prices and diminished profits have been neutralised.

In the case of almost every industry the evidence given, which was confirmed by the answers of the Chamber of Commerce, showed that the volume of trade has increased while the profit has diminished, and foreign competition has added to the trouble of our manufacturers; this fact was more particularly corroborated by the representatives of the paper-making industry, who affirm that one industry after another in this country is gradually being called upon to compete, not with articles made in the ordinary course of trade, but with the articles of surplus

production, which Continental manufacturers can afford to sell somewhat below the ordinary cost of their production, and yet realise a profit. This and the rigid exclusion of our surplus products abroad owing to protective tariffs act as aggressive protection.

Paper sold in Berlin at 3*d.* a pound is exported to England at the rate of 2*d.* a pound, and has a preferential railway rate granted it.

We are hardly able to hold our own even in the open market in our Colonies and India, because paper is supplied at prices which are unremunerative to English manufacturers. Mr. Chater attributes the power of Continental manufacturers to undersell English to the existing system of bounties and protection rather than to low wages, and considers that though the abolition of the excise duty, which immensely developed the consumption of paper, was a pure gain to this country, that of the import duty led to foreign competition.

Throughout the period of depression wages in this country have generally remained stationary; whereas abroad they have increased with increased price of provisions, in England they have increased with a decreased value of provisions, and our labourers are not only better off absolutely, but better off comparatively with labourers in other nations, and in many portions of the iron trade the labourer has been faring better than the capitalist; the rate of wages for time work has recently been slightly higher than the average of the last twenty years, but the rate for piece work has in nearly all cases diminished.

The answers received by the Royal Commission from labour associations show that the number of workmen out of employment at the time when the answers were drawn up, varied considerably according to the districts and trades to which they belonged, and that there has been greater want of employment among unskilled than among skilled workmen.

"The answers received from our representatives abroad lead to the conclusion that the condition of trade in the various countries of the civilised world differs very materially, and that commercial depression has not been so widespread or so uniformly manifested as has sometimes been supposed. In Belgium, France, Russia, Scandinavia, Spain and in the United States the position was represented as being almost identical in its leading features with that existing in the United Kingdom; whilst, on the other hand, in Austria and Germany the remarkable growth of industrial enterprise appears to have neutralised the effects of falling prices and diminished profits. In some countries, notably in France and Italy, British trade does not appear to have diminished in any undue proportion, but in many others foreign competition has made large inroads on the business of English firms, and to quote Mr. Baring's words in

his report on the trade of Portugal, 'Although we have not been ousted from the market . . . . . we have rivals, native and foreign, who compete successfully with us in branches of trade in which we formerly held a monopoly.'"

The maintenance of the foreign trade of this country has for some time proved a source of great anxiety to merchants. About 20 per cent. of our exports are sent to our Colonies, or, including India, 30 per cent., and France only exports from 6 to 7 per cent. to her Colonies. Our greater success in this direction has been attributed by M. Théry, in a recent report on French trade, to the Institution of Agents-General:—"I call your special attention to this point," he says, "because I hold that it is to the establishment of agencies, formed by the Colonies themselves, without the aid of the central government of which they are wholly independent, that the manufacturers and merchants of England owe the great results which they have obtained in their Colonies." That the establishment of Agents-General have been fraught with good results is undoubtedly true, but all our success is not due to their establishment, which is of comparatively recent date; and the results which have been obtained in our Colonies might be obtained with foreign countries, by adopting some practical methods for securing direct commercial relations between them and our home trade.

In the evidence given before the Royal Commission there was a general agreement

"That the trade and industry of the country are in a condition which may be fairly described as depressed;

"That by this depression is meant a diminution, and in some cases, an absence of profit, with a corresponding diminution of employment for the labouring classes;

"That neither the volume of trade nor the amount of capital invested therein has materially fallen off, though the latter has in many cases depreciated in value;

"That the depression dates from about the year 1875, and that, with the exception of a short period of prosperity enjoyed by certain branches of trade in the years 1880 to 1883, it has proceeded with tolerable uniformity, and has affected the trade and industry of the country generally, but more especially those branches which are connected with agriculture."

It will hardly be denied that the condition of agriculture in this country concerns the very life-blood of the nation, and it would have added to the interest of the Report, if the Commissioners had been more ready to give expression to their convictions upon the question of remedies for the present state of affairs.

As regards the *causes* which have contributed to the depression

in trade, there is naturally less unanimity of opinion; but chief importance was attached to the following:

"(1) over-production; (2) a continuous fall of prices caused by an appreciation of the standard of value; (3) the effect of foreign tariffs and bounties, and the restrictive commercial policy of foreign countries in limiting our markets; (4) foreign competition, which we are beginning to feel both in our own and in neutral markets; (5) an increase in local taxation and the burdens on industry generally; (6) cheaper rates of carriage enjoyed by our foreign competitors; (7) legislation affecting the employment of labour in industrial undertakings; (8) superior technical education of the workmen of foreign countries."

The complaints of depression have for the most part proceeded from the producing class, those who derive their incomes from property not directly connected with productive industries having little ground of complaint. The Commissioners point out that there is a general agreement on all hands that business, though not absolutely less in quantity, is carried on with the smallest possible margin of profit, and in many cases with no profit at all, yet that this is not altogether supported by the income tax statistics. But it must be remembered that the income tax statistics, which are based on an average of preceding years during which trade had not reached the fullest extent of depression, are of little practical value for throwing any light on this question. The growth of the assessment is undoubtedly due partly to the increased efficiency of collection in late years, and partly to the fact that owing to the unwillingness of traders to make known that they have sustained losses, the tax is often paid on profits which have not been earned.

The producer and capitalist seem to have been the sufferers, while the general prosperity of the working classes, if not increased during recent years, has not materially diminished.

The displacement of labour caused perpetually by the increased use of machinery or other changes in methods of production, must create some distress of a more or less temporary character among the working classes; the demand for labour also is always fluctuating and uncertain, but just recently this irregularity has been more marked than usual. *When fully employed*, the workman in this country is, almost in every respect, in a better position than his competitors in foreign countries. A larger share of the aggregate wealth produced in the country falls to labour now than twenty years ago, but while wages have risen profits have fallen, and a corresponding diminution has taken place in the share which falls to capital. There is a point beyond which this process cannot go; if capital loses all inducement to lend

itself to the work of production and the employer is driven out of the field, the labourer must suffer with him.

The Chancellor of the Exchequer when introducing his Budget for the present year, stated that the revenue from licences on the luxuries of the rich had latterly shown a great and continuous decline, and that the agricultural and commercial depression is shown by the fact that the well-to-do classes have been obliged to cut down their expenses. The number of persons with incomes of less than 2,000*l.* a year has increased at a more rapid rate than the population which during the last ten years increased about 10 per cent., while the number of persons with incomes over 2,000*l.* has increased at a less rapid rate, and the number of incomes above 5,000*l.* has actually diminished.

In other words, profits appear to be more widely distributed among the classes engaged in trade and industry, and while the larger capitalists are probably receiving a lower return than that to which they have been accustomed, the number of those who are making a profit, though a small one, has largely increased. The reward of capital and management has become less, and the employment of labour is, for the time at least, not so full and continuous; so that even where the rate of wages has not been diminished the total amount earned by the labourer has owing to irregular or partial employment been less.

The accumulation of capital which always progresses in a civilized country leads to great severity of competition, and tends to lower the rate of profit, which tendency is only checked by an expansion of trade caused by the creation of a new demand. But a large accumulation of capital is far from indicating prosperity in a country which possesses vast foreign investments and a great international trade, when the earnings of its industries and the employment of its population are either stagnant or declining. Among the chief causes of the depression enumerated in the report are over-production, the results of which have been intensified by the Franco-German War of 1870–1871.

The reason for the length of time during which this over-production has continued is probably to be found in the extension of the protectionist policy of so many foreign countries; on this and on foreign tariffs certain members of the Commission lay the blame for the persistency of this over-production, and they believe that the imposition of duties equal to 10 or 15 per cent. *ad valorem* upon all manufactures imported from foreign

countries would sufficiently countervail the bounty-creating effect of the protective tariffs, and the economy of production obtained through longer hours of labour and less effective inspection and regulation of its conditions.

The operation of the Limited Liability Acts has been another cause disturbing the relation between supply and demand; it has been found that the limitation of liability tends to encourage a less cautious system of trading than can be pursued by a trader who is liable to the full extent of his operations, with the result that production is often carried on under limited liability for some length of time at a rate of profit which would have compelled the ordinary producer to have restricted his output much sooner.

How far the fall in prices has been caused by an appreciation of the standard value will probably be shown in the Report on Currency.

In our home market Sir James Caird estimates that, during the year 1885 alone, the loss in the purchasing power of the classes engaged in or connected with agriculture amounted to 42,800,000*l.*, the influence of which upon the demand for manufactured goods must have been great. Of 65,000,000*l.* of British rental, 20,000,000*l.* has gone. This, at twenty-seven years' purchase, represents such a reduction as would sweep away all the apparent assessment levied on lands; a property which loses 30 per cent. of its capital value cannot be said to yield any profit at all until that loss is replaced. Notwithstanding a large increase of population between 1871 and 1881, the number of farmers and agricultural labourers decreased 10 per cent., and there is little doubt that the next census will show a still larger decrease, inasmuch as the decrease in cultivation of land has been much more rapid between 1881 and 1886 than between 1871 and 1881. During this period Sir James Caird estimates the loss in the value of crops alone at nearly 10,000,000*l.*, and during the last thirty years the percentage of population employed in agriculture has diminished more than 9 per cent. in England, more than 8 per cent. in Scotland, and more than 7 per cent. in Ireland. The result has been that the productive capacity of the land, some of which has been allowed to go out of cultivation, has also diminished, and with it the purchasing power of the agricultural classes. The two most potent elements of disturbance, as stated by Mr. Arthur O'Connor, are bad seasons and the competition of the produce of other soils, which can be cultivated

under more favourable conditions than those which affect our own.

Where land has not actually gone out of cultivation, its cultivation has in many cases deteriorated. Mr. Murrough O'Brien's evidence showed that in Ireland, owing to the emigration of a large portion of the able-bodied labouring population, the quality of the labour employed in agriculture has also deteriorated; he urged that the tenure of land there, being only for fifteen years, is not such as to induce a reasonable man to embark capital in improvements, but induces bad cultivation: agriculture being the only great industry in that country, the depression is most severely felt there.

Our trade with foreign countries is becoming less profitable in proportion as their markets are becoming more difficult of access owing to restrictive tariffs, and as the stringency of their commercial policy is becoming greater: even in our own Colonies and Dependencies we have lost the monopoly we formerly had.

One reason of this seems to be that the trading classes of this country are not as energetic as they used to be; they take less trouble to find new markets for their produce and to keep those they already possess. They can well take a lesson in this respect from the Germans, whose perseverence and enterprise are making themselves felt in every quarter of the world.

The Commissioners consider that the allegation that the difficulties connected with the transport of goods have aggravated the prevailing depression, even if proved, could only account for a local depression of trade, as what one trade or locality loses must obviously be gained by the trade or locality which is preferentially treated.

Railway carriage on the Continent is no doubt cheaper than in this country, partly owing to the lower initial cost of their railways, and partly to the longer distances to be traversed, which make the rate per mile lower.

A partial remedy for this may be found in the free development of canals wherever they are likely to be useful, and in preventing their control by the railway companies.

Such schemes as the Manchester and Birmingham Ship Canals show that the present cost of transport in England is felt to be a heavy commercial burden; though it must not be forgotten that the position of the inland producer has been greatly improved by the introduction of railways, which enable him to compete on much better terms than formerly with those

who have the natural advantage of the sea-board, and that the commerce of the country generally has derived great benefit from them, yet it cannot be denied that the industry of the country is greatly crippled by the excessive cost of internal carriage which places us at a great disadvantage in competing with other countries where the rates are low. Anomalies may be removed by the regulation of railway rates, but it is a question whether the development of the less expensive means of communication which we already possess in the shape of canals is not a better remedy than any which legislation can give us.

Of these causes contributing to the depression in trade some, such as the deterioration in workmanship, or the want of care or enterprise, which allows our foreign rivals, with less natural facilities or aptitude for production, to compete with us, are within our power to remove. The protectionist policy of foreign countries we cannot remove, nor, it is to be feared, the depression in agriculture, which is the darkest spot of all, and which cannot well show any material improvement until the competition of soils superior to our own has worked itself out.

Five of the Commissioners who sign the Report think that its tone is too optimist; that it minimises the depression which the evidence submitted proves to exist in almost every branch of the trade and industry of the country; that too much stress has been laid on the volume and value of our foreign trade, and too little on the unprofitable conditions under which a large proportion of it is conducted.

It is *profitable industry* which is the source of wealth, and when as the evidence shows, the stimulus of profit is withdrawn, production must ultimately diminish, and reproductive wealth cease to be created. Mr. Jamieson, in the separate report which he has signed, dissents from many of the conclusions drawn by the majority of the Commissioners, and very pertinently points out that the country is poorer not richer when it exports its native commodities at less than it costs to procure them. "It is notorious," he says, "that coal and iron have of late yielded no adequate return on the capital engaged in these industries, and only a meagre recompense for the labour employed. The price of coal in 1873 and the two following years was 20·49*s.*, 16·98*s.*, and in 1883 and the two following years it was 8·83*s.*, 8·99*s.*, 9·20*s.* The price of iron in 1873 and the two following years was 124·65*s.*, 94·67*s.*, 72·80*s.*, and in 1883 and the two following years 55·38*s.*, 56·45*s.*, 54·14*s.*, and in 1886 prices have ruled still lower."

Mr. Inglis Palgrave lays stress upon the fact that the connection between banking and the industrial condition of the country is so close that it appears hardly likely that the industrial condition can have improved to any appreciable extent, while the banking capital of the country shows so slight an augmentation; the material prosperity of the country being founded on the growth and proper distribution of capital and the maintenance of a due remuneration for labour. Let the stimulus of profit cease, and allow productive capital to wear out without being replaced, and wealth which now seems to be more evenly distributed between producers and workers will altogether cease to be available for distribution among the latter. The increased deposits in savings banks tend rather to show that the depression has had a deterring effect on enterprise, and has contracted openings for *more profitable employment* of small sums than to show increased prosperity among the working classes.

Lord Dunraven, Mr. Farrer Ecroyd, Mr. Neville Lubbock, and Mr. Albert Muntz were unable to sign the report of the majority of their colleagues, considering that it does not adequately set forth the extent and severity of the depression, or fully recognise the gravity and *permanent* character of the causes now operating to prevent the growth of our chief industries keeping pace with that of the population. *Insufficiency of employment* seems to them to have been the most serious feature of the depression. Formerly the difficulty with which the working classes had to contend was the dearness and comparative scarceness of the necessaries of life; free trade found a remedy for the difficulty, but has conspicuously failed to find the means for procuring the cheapened necessaries.

The struggle for an adequate share of that employment which affords the only means of gaining a sufficiency of these necessaries has become more keen and bitter with the advance of time, with the result that in the midst of plenty there is a large mass of people leading a miserable and precarious existence.

The markets for our manufactures have been narrowed by foreign tariffs and bounties which discourage and lessen the investment of capital in the development of our own agriculture and manufactures, and stimulate its investment in foreign industrial enterprises; when, as is now the case in this country, an increasing amount of food and other commodities are imported to pay income due to owners of foreign investments resident here,

without a corresponding export of productions of our own industries, the employment of labour here is directly limited. This struggle has latterly been intensified, more especially in large towns, by the increased competition caused by the influx of foreigners, who, coming over here in large numbers, make employment more difficult to get, depress wages, and drag others down to their level. Of 4,000 master bakers in London, 2,000 are Germans; of cabinet-makers, cigar merchants, and tailors, &c., it will be found that a large proportion are foreigners.

The evidence recently collected by the London Chamber of Commerce throws some light on the question of the employment of foreigners by English firms. It appears that in London 35 per cent. of the leading firms have foreigners in their employ. The reason of this seems partly due to the fact that a large amount of business is transacted with foreigners, and a large majority of Englishmen are unable to write or read the language of foreign correspondents. But the evidence shows that not only does the foreigner, who is generally a German, understand other languages than his own, but shows a higher average of mercantile intelligence.

It is to be hoped that the increased attention latterly given in this country to technical education, and to a better middle-class secondary education will, in time, prove in some degree a remedy for this, and enable Englishmen to adapt themselves more readily to the varying demands of modern commerce.

The dissentient Commissioners further point out with much show of reason that the increased imports of agricultural produce resulting from the withdrawal of labour from the cultivation of our soil and the consequent diminution of its produce, and the additional tonnage of shipping employed in carrying such imports, indicate decay and not growth of our productive capacity. So it is with all imports of manufactures of any kind which might have been produced here by the employment of labour which had remained unemployed; and with all exports of coal, machinery, &c., which might have been employed in this country in the production of food and clothing.

If the labour which could have produced these articles at home could have been otherwise profitably employed, *which it has not been*, then the imports would be advantageous.

Having examined the nature, extent, and causes of the prevailing depression, we come to the remedies suggested, and this portion of the Report seems the least satisfactory. The Com-

missioners begin by stating that they have few definite recommendations to make. This inability or unwillingness on their part to point out more fully in what directions we might look for some amendment in the condition of trade and agriculture detracts much from the value of their Report. The reality and depth of the distress is admitted, but few or no remedies are proposed which are likely to relieve it. "There is no feature in the situation," they say, "which we have been called upon to examine so satisfactory as the immense improvement which has taken place in the condition of the working classes during the last twenty years." Have they not to a great extent mistaken the possibility for the attainment? With such an inordinate number of labourers and artisans out of work, the condition of the working classes can hardly be called satisfactory. True, they have suffered less from the depression than employers of labour and capitalists, but that they have as yet done so affords little consolation and slight encouragement for the future of the general condition of the country to which the Commissioners who sign the chief report look with such complacency.

Politics, it is to be feared, must ever stand in the way of a true and unbiassed opinion on such matters. As Mr. John Evans says in his evidence: "We have in our body a vast variety of political opinion, and certainly in some cases there appears to be a view that any question relating to free trade is beyond the bounds of discussion, and that it is a kind of deity which has been set up, and no blasphemy must be heard against it. That being the feeling with a certain number, of course there is a difficulty in getting any general consensus of opinion."

It was Cobden's belief that the advantages of free trade would speedily become so apparent that every nation would follow our lead in adopting it. This belief has been sadly falsified by the results of the last forty years. We have given free trade, but have not gained it; instead of doing so our system has encouraged protection abroad, with the result which has become only too apparent. In many protectionist countries the growth of industrial enterprise has been as remarkable as the depression and contraction of our own.

Most of the evidence seems to agree in the importance of finding some means whereby to counteract the harm done to our commerce by foreign tariffs and bounties. Upon this point the main report keeps absolute silence, and Mr. Auldjo Jamieson attributes the apparent, and to unofficial minds unaccountable

apathy of the Commissioners to the "reluctance of the Commission as a body to enter on any enquiry which could tend to a conflict of opinion on the question of free trade." His words are worth quoting :—

"I think the reluctance to deal with it is due greatly to misconception; controversy cannot touch the axioms which combine to form the principle of free trade; it is the efficiency or the imbecility of the method which applies that principle to the practical business of the country which may be questioned; if a beneficent principle fails to accomplish beneficent results the fault must lie with those who have to put it into practical operation.

"That there is some delinquency is apparent from the evidence. Free trade justly credited with every capacity for good comes before us in much of this evidence laden with the broken promises and disappointed hopes due to the extravagant advocacy of its early supporters. It was to convert the world; and after forty years no nation of importance has adopted it, and some have abandoned it. It was to confer great benefits on its votaries, and corresponding evils were to assail those who rejected it. The prosperity we enjoyed was shared while it lasted with other nations, and the ratio of their advance not infrequently outstripped our own; the depression which other nations have suffered we have shared with them; though we alone have had the benefit of free trade. Enterprise was to be paralysed and invention stifled where free trade did not prevail; but Germany has rivalled, if not excelled, us in enterprise; and America has been more prolific of invention than any other nation; and to neither Germany nor America has free trade contributed its stimulus. A system which can confer prosperity on its votaries only when those who abjure it are also prosperous, and which permits depression to assail with strict impartiality those who adopt and those who reject it, appears to me either to have much reason to complain of the method of its application or to require some further justification than those arguments which prevailed before prophecy was falsified by history. I think, therefore, that it is much to be regretted that any attempts to reconcile the results of free trade with its beneficent principles, and to reduce it to its proper level as the weapon and not the master of true statesmanship, are so keenly resented by those who are most jealous of its reputation; they seem to have passed into that phase of opinion when inquiry is deemed pernicious, and men allow themselves to become the slaves of doctrine; their zeal for the dogma outweighing alike consideration for its truth and concern for its effects.

"No system of human politics or economics can be *absolutely* true; it can be true only *relatively* to the circumstances and conditions of the society to which it is applied. What was true in a political sense, *i.e.*, good, in the thirteenth century would be untrue, *i.e.*, inapplicable, in the nineteenth; what in a political sense is true in London would be in a similar sense untrue at Honolulu. No investigation, therefore, could in my opinion have been more useful and none more profitable as bearing on the depression of our national industry than an inquiry whether the circumstances of 1886 are in all respects equally appropriate as those of 1846 to the adoption and application of free trade precisely as it was then adopted and applied. * * *

"It is no doubt alleged that the true effect of (foreign) bounties is beneficial to this country; that the foreign countries tax themselves for our benefit, and enable our consumers to enjoy the advantages of sugar at an abnormally low price; so that the longer they continue that policy the better for this country generally, although a portion of the community may suffer by the extinction of its industry. But no Government has dared openly to avow this cynical policy. Every administration has striven by diplomacy to procure the abolition of a system which has been recognized as oppressive to British industry; that is to say, every administration has deemed it its duty to urge on foreign governments what if adopted would have had the effect of depriving British consumers of that advantage of abnormally cheap sugar they now

enjoy just because that was incompatible with the fair treatment of our own industry or at any rate detrimental to its just interests.

"These diplomatic efforts have failed; the question therefore which those who continue to suffer from these bounties have presented to us is whether legislation can effect what has baffled diplomacy? It is this appeal for legislative aid which the evidence shows is by many so keenly resented; yet if diplomacy was right in its object how can legislation directed to the same purpose be wrong? Is it only the method that is obnoxious?"

But Mr. Jamieson does not go so far as the dissentient Commissioners who suggest countervailing duties, which he does not think would be effectual, and whose application would be difficult. Owing to the apathy of the Commissioners on this important question, our information as to the origin, motive, and operation of these foreign tariffs is too meagre to enable us to form any definite remedy in order to counteract their effects.

It is these foreign tariffs which enable the Belgians to undersell us in the very centre of our coal and iron industries, and not long ago a report, which was not denied, was circulated in many papers that the Midland Railway Company were using Belgian ironwork and castings for the alterations to their station at Barnsley, or in other words, that a large portion of the earnings which should have enabled a certain number of workmen in the Midlands to provide for themselves an adequate share of the necessaries of life, was being given to the foreigner, and an extensive amount of capital either condemned to lie idle or driven out of the country. Very recently Spanish pig-iron was being offered in Staffordshire at rates below those of the local makers. Never before had hematite "pig" or finished product been offered in this country. Knowing this, and that if some remedy is not found for our present fiscal arrangements the destruction of our raw iron industry is only a question of time, it is almost inconceivable how the Commissioners could have paid so little attention to an enquiry into the subject. What has happened in the case of one industry can, and probably will, ultimately happen in that of others. The importation of cheap Spanish lead has completely destroyed the lead industry of England. And what was the meaning of this annihilation to producers and labourers? To the former it meant not displacement but loss of capital, to the latter it meant want of employment to over 30,000 miners with their families, for one of the worst features of the depression of trade has been the fact that when labour has been displaced it has in so many cases remained unemployed. A certain section of the population undoubtedly derive benefit

from the cheap importation of lead, but they derive such benefit at the cost, and very dear cost, of the nation as a whole.

The only remedy which the Report has to offer for this state of affairs is the cheapening of the cost of production, "so far as it can be done consistently with the maintenance of sound quality and good workmanship." This we are assured will be the only means of securing success, for we have natural advantages in this respect such as are possessed by few of our rivals. This latter statement seems to beg the question. Taking the instance of Spain just mentioned, the natural advantages alone, without taking into consideration the artificially created ones, are rather on the side of our rival than with us. Setting aside the correctness of the belief of those who are well qualified to judge, that the foreign workman, though only receiving about half the pay given for similar labour in England, does not do the same amount of work for the money, and allowing that it is possible to compete in the matter of wages, several conditions are against us—among them climatic ones—and it must be remembered that the foreigner is able to avail himself, on an equality with us, of any improved machinery and processes for cheapening production. There is no denying that in the case of lead, and possibly in the near future in that of iron, Spain has advantages which, under our present fiscal system, it is hopeless for us to gain; such competition can only be met by a change of economic policy.

After boasting of our natural advantages, the Commissioners somewhat temper their enthusiasm by the following statement: "*If we do not* possess to their full extent the same natural advantages as we formerly enjoyed, we have still the same physical and intellectual qualities which gave us so commanding a lead, and we see no reason why, with care, intelligence, enterprise, and thoroughness, we should not be able to continue to advance." The remaining remedies proposed are increased vigilance on the part of our commercial and industrial classes in order by searching for and developing new markets, to hold, so far as is humanly possible, the supremacy which we have enjoyed for so many years, and which is now being assailed on all sides.

There has latterly appeared to be a disinclination on the part of the trading classes of this country to adapt themselves, and to accommodate their productions to the taste and requirements of their customers. The more frequent and prompt publication

of Consular Reports which has now been adopted, undoubtedly helps to place the commercial community in touch with the requirements of foreign nations, and is a step in the right direction.

With a view to the development of new markets for our goods, Commander Lovett Cameron, in a letter dated March 8th, 1886, draws the attention of the Commissioners to the great importance of the study of commercial geography, and states the following heads under which it should be studied, *some* of which are already in charge of various Government departments, though such knowledge as is collected is not, as it should be, generally available to the trading community.

a. The consideration of the markets of the world, both "actual and potential;" what manufactures which we produce may be profitably disposed of in them, and what in return we may draw from them in repayment which we can put to a profitable use.

b. The fluctuations of trade with these markets and their causes.

c. The various trade routes, ancient and modern, and the causes which have led to their adoption, abandonment, and in certain cases to their being again utilised.

d. Tariffs, customs, and local taxation as bearing on the ultimate cost of the manufactured article to the consumer.

e. The causes which have led to particular trades or manufactures being carried on in certain localities; and why in some instances these trades and manufactures have deserted these localities to become permanently or for a time established in others.

f. The study of commercial hygiene.

g. The establishment of properly arranged museums of both raw and manufactured articles, to enable the merchant and manufacturer to know to what places it will be most profitable to export British goods and whence to draw at least cost raw materials to feed our mills and workshops.

h. A study of the various port regulations in different parts of the world, so that information should be given to masters of merchantmen which will prevent their running the risk of infringing them through ignorance.

i. The consideration of great engineering works of national or world-wide importance, such as the Suez and Panama canals, the tunnels through the Alps, the proximate construction of railways in China, the Severn and Mersey tunnels, the Tay and Forth bridges, and, perhaps, the Channel tunnel.

k. The various modes of transporting goods and their comparative cost, and how that cost can be reduced by improvements in mechanism.

In Germany there are numerous publications devoted to the cause of commercial geography, and many museums and societies, with duly qualified agents, specially founded for its study.

Closely connected with this study is that of technical education, on the importance of which too much stress cannot well be laid. Some of the recommendations of the Royal Commissioners on Technical Education are worth recapitulating.

That school boards should be empowered to conduct science

and art classes for artisans, and that training colleges for teachers should be reformed to meet modern requirements; that agricultural schools on the model of those in foreign countries might with advantage be established, and that our future farmers should be taught foreign systems of farming. They further suggest that grants for manual work should be made in boys' schools, on the same principle that they are made for needlework in girls' schools, and the founding of museums of applied art, and of a character adapted to local industries.

Fortunately the country is awaking to the importance of a good technical education, and there is promise of satisfactory progress being made in this direction.

The recent meeting of Members of Parliament representing trading and commercial centres in order to consider the necessity of forming a Committee of such Members, irrespective of political parties, to watch over questions of commercial interest, is further reassuring evidence that commercial apathy is being aroused. Little attention has been paid by the legislature to commercial questions, and though we must look to private enterprise rather than legislation for remedial measures, legislation can afford some remedy in regard to either, providing greater facilities in the transfer of land, making more effective the existing provisions of the law with regard to fraudulent marking or description (as attempted by the "Merchandise Marks Act"), and other matters.

The importance of the development of communication by rail is shown by the fact that the trade of India is nearly five times as great as that of China, where owing to the absence of railways and the comparative uselessness of the rivers for trading purposes, most of the traffic is carried on by caravans which are both tedious and expensive means.

Both China and Burma are fields in which we can find opportunity for new enterprises; the former country is more inclined than has previously been the case for a friendly alliance, but unless energy, and activity, and watchfulness are shown, our traders will find themselves once more ousted by the Germans. The acquisition of Upper Burma has increased our Empire by about 188,000 square miles. The exports and imports of British Burma now amount annually to over 20,000,000*l.* sterling, and the frontier trade is estimated at 1,100,000*l.*; these figures show the importance of the country to our commerce. The Valley of the Irrawaddy is extremely fertile, and as are the river valleys of

Upper Burma, and the country only requires development, by building roads and railways, to make it one of the most valuable additions to the Empire, and the connection of our Burmese railways with the Indian and Siamese systems, and a railway from the Siamese terminus to the Chinese frontier, would add a stimulus to our trade and commerce which would well repay the initial cost.

The chief report does not make any specific suggestions as to amending the law relating to limited liability, the Commissioners considering that the details of any new legislation on the subject would require to be discussed by those who possess a more practical acquaintance with the working of the existing law.

Mr. Inglis Palgrave is of opinion that the law requires a thorough revision, and most people will probably agree with him. The necessity of making more stringent regulations as to the subscription of nominal and the raising of loan capital, and the appointment of directors seems only too evident.

It would have been interesting to have seen what is the opinion of the Commissioners upon State-aided Colonisation, as an indirect remedy for some of the causes contributing to the competition which has tended to make the struggle for existence so hard, but if the Report is somewhat disappointing in respect of the want of suggestions of remedies for the depression which has lasted so long, it possesses the merit of having proved the reality of it, and of having roused the country to a sense of the gravity of the situation and of the danger of our never regaining our commercial supremacy. We have been for some years living in a fool's paradise, fondly supposing that the enterprise and activity which has gained for us the position which we have held was no longer necessary to be exerted in order to retain that position; but if it is to be completely lost there is reason to believe that it will not be without a struggle.

A. Llewelyn Roberts.

THE NATIONAL POULTRY AND EGG SUPPLY.

THAT the demand for poultry, and more especially for eggs, throughout the United Kingdom, is wonderfully large at the present time and constantly increasing, is generally known, but how extensive it really is, is in the ken only of those who have studied the figures or inquired minutely into this particular branch of our commissariat. It has, however, been computed by economists that at least one hundred eggs per annum are consumed by each person in the British dominions, very young children only excepted. If then for illustrative purposes the egg-eating population of Great Britain and Ireland be set down as numbering thirty-five million persons, it becomes apparent that 3,500,000,000 eggs will be needed to supply their demands.

Foreign Sources of Supply.—About a third of the eggs and a large proportion of the poultry we consume come to us from foreign countries, chiefly from France and Germany. Of the extent of this foreign aid to our commissariat there is no room for doubt, exact figures relating to this portion of our egg supply being from time to time published by the Custom House authorities. Thus we are enabled to state that in the year 1886 not less than 1,033,579,440 eggs were landed in the United Kingdom from Continental places, whilst for the half-year ending with June, 1887, the number of these table delicacies received was 559,081,560. The money value of the eggs imported in the year 1886 amounted to 2,879,000*l.*, France being the recipient of 1,215,360*l.*, whilst Germany drew upon us for 743,618*l.*, to Belgium we remitted 653,784*l.*, and to other countries we paid 266,238*l.*, all for eggs. It is necessary, however, to explain that the sums paid to Germany and Belgium represent eggs which in the course of transit are simply brought through these countries on their way to the larger seats of consumption in Great Britain ; as a matter of fact the eggs said to come from Belgium are Italian, shipped at Antwerp. Since the opening of the St. Gothard tunnel a very large number of excellent eggs have been sent here by the industrious peasants of those parts of Italy nearest to the point of transit (Ancona), who find that it remunerates them very well to keep fowls for the purpose of supplying the English markets with "new laid eggs." Denmark also sends to our chief centres of population

large supplies of good marketable eggs, great pains having been taken of late by the small holders of that country to improve their breeds of poultry, or rather to introduce new kinds with the view of promoting this kind of commerce. The Danes, keeping this object before them, have wisely selected the well-known "Leghorns" as the best fowl for the purpose, and these, by means of Government aid to some extent, are now being so largely bred and distributed throughout the kingdom as greatly to increase the yield of eggs—that particular fowl, as is well known, being a prolific layer. As may be deduced from the more than two millions and a half sterling which we pay to foreigners every year for the eggs sent to us, very large numbers of fowls are bred, not however in great quantities on any one farm, but in twos and threes, or in tens and twenties at twenty thousand different places. Many persons suppose the reason why France is able to send England so many eggs to be that numerous poultry farms on a scale of great magnitude have been organised for the purpose, but that is not the case. The eggs are obtained all over the country from cottagers who make fowl-keeping a business, and small farmers who find it remunerative to keep fowls, which they watch and tend with care, knowing their value as aids to income. The *petite culture* of France is adapted to the producing of eggs; indeed, there are scarcely any large farms in that country, but the farmers of France understand the importance of poultry keeping and attend to it in a way that no English or Scottish farmer has yet thought of emulating. The selection of the kinds best suited to the locality in which they are to be fed is considered a matter of grave importance, and so each district takes pains to have a breed adapted to its particular climate and surroundings. In preparing poultry for table the henwives of France altogether excel their English, Irish, or Scottish sisters, their fowls are white in colour and of fine flavour, while the eggs sent to this country are most carefully packed, and arrive in excellent condition for culinary uses.

Stock of Poultry in the United Kingdom.—Among the agricultural returns of Great Britain there used to be included a census of barn-door fowls and other poultry, and the same for the poultry fed in Ireland, but the statistics for Great Britain are no longer collected, doubts having arisen as to their correctness. The following figures represent the numbers ascertained to have been kept in the year 1884:—

England	....	12,384,858
Ireland	....	12,746,048
Scotland	....	2,307,092
Wales	....	1,369,062

Showing a total of 28,807,060 head of poultry of every kind.

Of these 20,000,000 may be taken as being the number of common fowls, the remainder being turkeys, geese, and ducks. These figures might prove suitable enough for illustrative purposes, but as it is believed by many persons who have studied the national poultry supply, that they fall considerably short of the actual numbers kept, the total stock of the United Kingdom may be set down as being 31,000,000 of all kinds, 21,000,000 of the number being what are known as barn-door fowls. As in France, there are not in the United Kingdom any poultry farms of abnormal size. Attempts have occasionally, however, been made to breed and keep a large number of fowls in one place, but they have not according to popular report proved very successful. Many persons, it is said, have succeeded in keeping from two to eight hundred fowls in a healthy condition, but it is doubtful whether such experiments have proved remunerative. At the present time the poultry supply of the United Kingdom is in the hands of not less probably than half-a-million persons, each of whom, striking an average, may feed some sixty fowls, the number running in individual cases from three or four to a hundred. Farmers throughout Great Britain have hitherto as a rule taken but little notice of their poultry, their fowls and all pertaining to them being left to the care of their wives and daughters, who keep the money they earn as a perquisite. Till of late years these ladies of the farm, except in the noted poultry districts of the country, have paid almost no attention to their fowls, unlike their sisters of the Continent who have made the poultry branch of their husbands' farms remunerative, and are able to caponize their fowls and nurse them through all sorts of ills.

The various Breeds.—As may be gathered from the foregoing remarks, it is only about twenty years since the attention of farmers and fanciers was turned to the necessity of improving their breeds, and to the selection of kinds for laying, and of kinds the mission of which should be to hatch and nurse. Formerly only one description of fowl was kept in the barnyard,

Cochins, Houdans, Leghorns, and others were quite unknown to the British farmer and his wife, who were contented to see a few mongrels running about in their rickyards or grubbing in their fields; and on farms upon which a couple of hundred birds might have been reared at almost no cost that could be calculated (seeing that as a rule fowls on farms find their own food) only some thirty or forty head of all kinds would be found, so little was poultry thought of. Whilst pounds might have been added to the farmer's income by means of his fowls, only shillings were in reality realised. Happily the farmer and his family have at length awoke to the fact that there may be "money in the poultry yard," and now they are making up for lost time.

The following notes will give the readers of this paper a good idea of the qualities of the different breeds of fowls now in vogue:—*Andalusians.* This particular variety has been known in this country during the last forty years, the originals having been introduced in the year 1846 from Xeres de la Frontera, in Andalusia, and from these the fine Blues of the period have descended. The chief merit of the Andalusians is their great laying power, and the large size and excellent flavour of their eggs, of which they will on the average produce 190 in the course of the year. Andalusians will not sit, but they are a hardy and easily kept variety, which is supposed by some authorities to have been evolved from a cross of Minorcas. *Brahmas* have the reputation, and are well entitled to it, of being fine layers. Mrs. Ferguson, who is an authority in such matters, says, "the hens excel as mothers and layers of fine large eggs during winter, even when snow covers the ground, they lay regularly an average of five eggs a-week. There are light and dark fowls of this breed, hens weigh about nine and cocks about thirteen pounds." *Bredas* are a useful kind, they are as a rule non-sitters, but excellent egg-producers, are hardy in their habits, easily fed, and excellent for table purposes. *Cochins* are of several varieties in colour, buff, white, black, cuckoo, and partridge, they lay with regularity, and most of them make good mothers; the birds are of gigantic size, and their chickens when early killed are excellent for table purposes. Cochins will lay from 125 to 140 eggs per annum. *Crevecours* are perfection for the table, and lay a moderate number of very large eggs, and as the hens do not sit they go on laying continuously for long periods without a break. This fowl weighs well, cocks nine and a-half, and hens eight and a-half pounds as

an average. *Cossacks.* These are free layers and excellent for table use. The breed has been in great repute in Holland for several years. *Courtes Pattes,* like the Crevecour, is a French fowl of prolific laying power, also a good sitter and attentive mother. There are not many of this breed in England. *Dominiques* come from America, but although they are good layers, easily kept, and kill into excellent "poultry," they are not common in the United Kingdom. *Dorkings* have of late years been much improved, and are large and white in their flesh, and have an equal distribution of fat. They lay liberally, and are always in request for the use of the table; there are several varieties of the Dorking, which is an English bird all over, and highly esteemed everywhere. *Dumpies,* or Scotch Go Laighs, are again, after being almost extinct as a breed, coming into fashion. The Dumpies, as their name implies, are of low stature, but are valuable for food uses; they lay a liberal number of fine large eggs, and have obtained a good character as mothers, they used to be utilised for the purpose of hatching partridges. *Game.* These are excellent fowls in many respects, they lay 200 eggs per annum on the average; the hen is also a good sitter, and careful of her young ones. Game fowl are good for food in an eminent degree, and there several varieties of the breed. *Hamburghs* come next in order, they may be described as being on the whole a hardy fowl, and all of them good layers, the hens lay almost daily, and seldom seek to sit; there are many varieties, all of them beautiful to the eye. Some hens of the Hamburgh kind will lay over 200 eggs per annum. *Houdans* are now well known as being excellent table fowls, and able to produce about 160 eggs in the year. *Langshans* and *Leghorns.* The former lay well, and make attentive mothers, as table poultry they are excellent. The Leghorns are prolific layers, but yield rather small eggs, they do not care to sit, but are hardy, are easily kept, and look well. *Malays* when crossed with Dorkings become valuable as table fowls, there being plenty of flesh upon them; they produce a well-flavoured egg, while the birds look picturesque and possess beautiful plumage. *Minorcas* are prolific egg yielders, but almost never sit, their eggs when laid by full-grown birds are pure white and of great size. *Polish* fowls are pretty sturdy, but require protection during rain; they lay a fair supply of well-flavoured eggs. *Plymouth Rocks* are hardy and easily kept, they are good layers and grow very rapidly. *Scotch Greys* are a profitable fowl, and much thought of by Scotch henwives, the

flesh and skin being white and of good flavour. *Silkies* begin to drop their eggs shortly after they have attained the age of six months, they can profitably be utilised as breeders, being persevering sitters, and in great demand for sitting on partridge and pheasant eggs. *Spanish* are now so much bred for showing that their utility as layers and as table fowls has of late diminished, the hens used to produce at the rate of 160 eggs per annum, but that number has fallen off. *Sultans* are now coming into fashion and are frequently exhibited. They lay well, do not care about sitting, and are not ill to feed, being small eaters. *Wyandottes* have lately been introduced from America, they feather and come to maturity very early; they are prolific layers, while their flesh is of excellent flavour, and as they are of a hardy nature, they can be kept without much trouble. *Yokohamas* will, in the future, be greatly esteemed; they are picturesque, graceful, and uncommon looking, and have already been awarded many prizes.

Distribution of Poultry in England.—Accepting the figures as they were given in the Agricultural Returns pertaining to the year 1884, we find the two great poultry-producing counties of England, namely, Surrey and Sussex, possessed of a joint stock of 532,514 head of poultry of all kinds, that is to say, of turkeys, geese, ducks, and fowls, of which 363,162 were bred and fed in Sussex. These counties are named first, because they have long been familiar to readers as being *par excellence* the poultry-producing parts of England, but the great county of York, as is natural, heads all the other shires in the numbers of its poultry stocks, there being in the three divisions 1,546,977 head of feathered stock, over a million and a quarter of which are "fowls." Norfolk and Lincoln are also rich in poultry, in these counties there is a head of all kinds, in the case of the latter of 798,763, and in the former of over half-a-million. Cornwall and Devon breed between them a million of these animals. Lancaster, Stafford, and Suffolk also feed large numbers, and in many counties a stock of poultry is bred and fed equal to a quarter of a million of all kinds. The largest number of turkeys is found in Norfolk, 47,499, Suffolk follows next with 32,128, whilst 20,675 of these birds are fattened in Salop. These figures must not be taken for more than they are worth, they were the first official statistics of the kind that ever were published, and after being collected for another year they were discontinued in consequence of the difficulties attending their collection. The

statistics of the numbers of poultry fed in Ireland still continue to be collected, and are understood to be given in the returns with a great degree af accuracy.

The English Poultry Trade.—Before a fowl is transported from a Sussex or Surrey cottage to the shop of a West End or other London poulterer, it is handled by several persons, and may have for a time to undergo a process of artificial feeding, being "crammed" in some cases by machinery, so that it may be rapidly fattened in order to its early and creditable appearance at market. Seeing that there are no great centres of poultry breeding, it is necessary to collect the fowls in ones, twos, half dozens, and scores, or in greater numbers, from hundreds of farms and cottages, widely separated from each other. There are persons, "higglers" they are called, who accomplish the collection; these experienced hands in the purchase of poultry buy at a given sum per dozen, ranging from 15*s.* or 16*s.* to probably double that amount. The fowls collected by the higglers, who work both on their own account or as agents for local centres, are usually disposed of to some agent who gathers for the London market. Persons who make it their business to rear a small stock of poultry, study to have their chickens ready as early in the season as they possibly can. "Spring chickens," that is, young fowls hatched in November, December, and January, bring a remunerative price in the great metropolis, when ready for table, which must be in February or March: fancy prices are not seldom paid for these delicacies. The persons who rear spring chickens, and deal directly with those who retail them, will sometimes be able to dispose of a dozen pairs at about 5*s.* a pair to customers dealing with the West End poulterers who purvey fine poultry; these same fowls will be charged from 10*s.* to 16*s.* a pair to the public. Full-grown fowls, so called "capons," bring capital prices to those who retail them; fair-sized Surrey cocks and hens can seldom be purchased in the poultry shops during the spring months at less than 5*s.* or 6*s.* per fowl; in some seasons, indeed, the price has been much higher in the earlier weeks of the London season. Fowls reared in Sussex do not bring quite such good prices as those bred in Surrey; whilst those grown in Lincolnshire are still cheaper. Large numbers of the fowls brought to the London market are Dorkings. Much more attention is now given to the breeding of fowls for sale than was the case about twelve years ago. Now, when the matter of fowl feeding is becoming better understood than it was formerly, there are those who study the

production of eggs only, keeping those breeds which lay most liberally, and disposing of them to be killed the moment they stop laying; other breeders study to produce fine table fowls, so that the trade has changed somewhat from what it used to be "sixty years since," when all fowls were thought to be very much alike, especially mongrels, and were bred indiscriminately.

The Irish Poultry Trade.—The poultry stock of Ireland in the year 1886 was composed as follows:—Ordinary fowls of different breeds, 8,175,726; ducks, 2,856,407; geese, 2,062,734; turkeys, 814,955; in all, 13,909,822. The poultry bred and fed in the Emerald Isle seldom varies in number, and rarely falls below thirteen million head, sometimes, as in 1881, '2, and '5, greatly exceeding that number. Poultry and eggs from the sister country find a ready market in England and Scotland, and many thousands of the Irish peasantry, as well as persons of better status, add a little to their other sources of income by keeping a few barn-door fowls or a flock of geese, the cost of maintaining them in most instances being absolutely *nil*, as they are able in many places to find their own food. In various localities in Ireland there are men who do nothing else but buy fowls for exportation to Great Britain *viâ* Liverpool and Glasgow. Such collectors or "trackers," as they are usually designated, lead a pretty busy life, being always on the road attending the little markets in their various circuits in order to purchase stocks offered for sale by petty rearers; the peasantry are also visited at their homes, or are intercepted on their way to market, and successfully dealt with. These persons are quite pleased to make a profit of a penny or twopence on each fowl they have purchased, and of from sixpence to a shilling on each turkey or goose. Many of the larger exporters will purchase a hundred dozens of live fowls in a day for export. Capital fowls are reared in Ulster, and Dublin is celebrated for having its capons and ducklings early in the market. Large numbers of living geese are received from Ireland by some of the English farmers to fatten for the Christmas markets. We have no means of knowing the exact number of eggs which Ireland sends to England and Scotland, but about forty years ago it was known that 50,000,000 were sent from Dublin to London and Liverpool. The eggs in some parts of Ireland are collected by runners who make a circuit of the cottages to gather in the brittle ware; these runners are children who become such adepts at the business as almost never to break an egg. Irish exporters do not pack their eggs so carefully

as French exporters, whose boxes are all constructed to hold 12,000 (ten dozen to the hundred), and are equally divided into two parts, so that half a box may be sold without the necessity of unpacking—an excellent plan. It may be stated here as a striking fact in connection with commerce in eggs and poultry, that carriage costs less from Hamburg than it costs from Ireland. The chief centres of the Irish poultry and egg trades are Wexford, Belfast, Cork, Clanmorris, Clonakilty, and Londonderry; the best breeding districts are Dublin, Belfast, Newry, and Wexford. In these districts the Bramahs are largely kept; the finest of the fowls are sent to the English markets alive; the sales effected in Ireland are all of living poultry. Most of the English-bred fowls are *set up* before reaching the wholesale dealers who sell their consignments by private treaty at the best prices they can obtain. Refrigerators have been erected in Leadenhall Market, in which fowls that have not been sold can be kept till required. Sometimes when there is a glut, these stores become well filled with a large stock of excellent table poultry.

Ducks, Turkeys, and Geese.—The number of ducks in the United Kingdom in the year 1884 has been given as a little over 5,000,000. In some of the English counties these fowls form an important portion of the poultry population, as in Devon, Cornwall, and Norfolk, where over 100,000 ducks are annually kept on hand, while in five or six other counties as many as 60,000, 70,000, and 80,000 are to be found. The rearing of this class of poultry is known to be one of the most profitable branches of the trade. Ducklings in March, April, and May cannot be obtained by the London public at much less than 1*l.* the couple, and occasionally as much as 24*s.* per pair is asked for a fine kind. With such prizes to tempt breeders, it may be supposed that all who possess requisites suitable to the business anxiously try their hands at the rearing of these valuable animals. A pool of still water or a running stream, large or small, is absolutely necessary to the successful rearing of ducks for market. There are several kinds of these fowls, but the favourites are Aylesburys, East Indian, Rouen, and Pekin; these birds are hardy and able to forage for themselves. Cottagers in agricultural districts feed them largely on worms, slugs, snails, &c.; but those who breed and feed on some systematic plan, provide their fowls with highly fattening food. Ducks' eggs are, as a rule, too valuable for breeding purposes to

be sold *as eggs*, but, nevertheless, a few are always to be found on sale. In November and December as much as 1*s.* each is willingly given for eggs that will be likely to hatch. Ducklings should increase at the rate of fully an ounce per diem, and at the end of eight or nine weeks, if well looked after, they should weigh four pounds or a little over. Turkeys' eggs are also occasionally offered for sale, but, as a rule, all the eggs which a hen turkey is able to produce are required for hatching. The mother bird is an admirable and patient sitter, and can be easily coaxed to bring out a couple of broods in succession. The young ones are delicate to rear during the first six or seven weeks, and great pains require to be taken with their housing and feeding, but the trouble is well repaid. When successfully brought to market good prices are obtained for them, both as poults during the summer months, and as Christmas turkeys. The chief English breeds are the Norfolk and the Cambridge; the American Bronze turkey is also bred in the United Kingdom, we believe, to some extent. The number of turkeys of all ages set down as being on hand in the United Kingdom in the year 1884 was 1,210,343; in the county of Norfolk 47,499 are kept in stock for sale and for breeding purposes. Suffolk also feeds a large number—as many as 32,128; whilst in the three divisions of Yorkshire as many as 24,000 of these birds are usually to be found; in other counties from 3,000 to 20,000 turkeys are kept. Geese to the number of 2,783,237 were to be found in the United Kingdom three years ago, and there will certainly not be a smaller number to-day. Cornwall, Cumberland, Devon, Hereford, Lancaster, Lincoln, Norfolk, Salop, Somerset, Stafford, and the county of York, each feed a very large number of geese; in the three divisions of Yorkshire as many perhaps as 100,000 will be in stock all the year round.

Home Egg Production.—With such a very considerable stock of poultry of all kinds in our possession as has been indicated, and in particular 21,000,000 of domestic fowls, it is reasonable to suppose that our home egg production, although insufficient for our population, must be enormous. The hens of course multiply themselves exceedingly in the course of the year, as persons breeding fowls now study to keep up a constant succession of prolific layers. Taking it for granted by way of illustration that 12,000,000 of the fowls are hens of a reproductive age, and that each on an average will contribute 150 eggs per annum to the stock, the number thus produced would be 1,800,000,000,

which added to the number we receive from foreign countries (1,033,579,440) would go a far length in providing a hundred eggs per annum for each unit of a population of 35,000,000 individuals. In all probability the laying fowls on the average of years will be nearer 14,000,000 than 12,000,000, the stock of male birds being kept down as much as possible in consequence of so many hens being reared merely to produce eggs and not to breed. For breeding purposes one male to six or seven females is deemed sufficient. We need not here take into account the sale of duck or turkey eggs, because, as is elsewhere stated, they are of such great value for hatching that they are only offered for sale *as eggs* in moderate quantities. Neither shall we take cognizance of pheasant eggs, which are seldom seen at table. Plovers' eggs, however, are an article of commerce, and large numbers of these greatly esteemed delicacies are in demand for fashionable luncheons and wedding breakfasts. It is hoped that in course of time eggs of every kind will be sold by weight instead of by the dozen. No article varies so much in weight as an egg. Of the better sorts it may be mentioned that Hamburgs weigh 10, Polish 9, Houdans and Cochins 8, La Flèche and Black Spanish 7, and Andalusians 6, all to the pound respectively.

Estimates and Illustrative Calculations.—It is obvious that with a producing stock of over 20,000,000 of domestic fowls an immense number of chickens and exhausted hens must reach the markets in the course of the year. If say 6,000,000 of the laying hens were each in the course of the year to hatch two broods of twelve chickens, it would give us the enormous number of 144,000,000, and if these were all to be sold as chickens or grown fowls (leaving the producing stock intact) at say 1*s.* each, the sum of money represented would amount to over 7,000,000*l.* sterling, whilst the eggs laid (1,800,000,000) would represent a similar sum if sold all the year round for a penny a piece. As a matter of course we cannot produce both eggs and poultry in inexhaustible numbers, and so the figures given must be accepted with the proverbial pinch of salt. Artificial aid is now being called in to aid in the hatching of most kinds of poultry and game fowl as well, so that hens are less drawn upon for breeding purposes than used to be the case, and chickens by means of the aid thus afforded are becoming more plentiful. Eggs, as every householder knows, can be bought at many different rates per dozen according to the season. At one period of the year eggs of a

kind may be plentifully purchased at little more than a halfpenny each, but really fresh eggs can seldom be bought at less than a penny per egg, 1*s.* 6*d.* and 2*s.* a dozen indeed are common enough prices, whilst for a few weeks preceding the Christmas season 2*s.* 6*d.* and even 3*s.* 6*d.* becomes a common charge for table eggs. A few figures illustrative of the pounds, shillings, and pence of the poultry trade of the United Kingdom may now be offered. In the first place the value of our capital stock of poultry may be roughly estimated. The figures of the national poultry stock have already been given from the agricultural returns of the year 1884 as being in all 28,807,060 head, and of that number the superior fowls, as we may designate them, number a little over 9,000,000, but as in 1884 the Irish stock of poultry was lower than in any previous year, or than it has been in any succeeding year, we shall adhere to our own estimate of 31,000,000, and calculate the turkeys, geese, and ducks as representing 10,000,000 of the number. An expert in such matters says that a fair all-round price per head for fowls, young and old, including all the fancy cocks and hens which nowadays bring such high prices, would be 1*s.* 6*d.* per head, so that the 21,000,000 estimated as being on hand may be considered as representing a total value of 1,575,000*l.* For the 10,000,000 of turkeys, geese, and ducks a similar amount may be put down, which represents a grand total of 3,150,000*l.* sterling. These figures are simply offered as illustrative, and must not be taken for more than they are worth. We do not propose to give any details relating to the value of the poultry houses or the furniture of such places, so many of them being mere sheds and outhouses, not specially built for the housing of poultry. Coming now to the outcome of the capital stock, we offer the following figures as a foundation for a more perfect computation:—

	£
Eggs, 1,800,000,000 at 1*d.* each	7,500,000
Chickens reared, say 70,000,000 at 1*s.*	3,500,000
Turkeys, geese, and ducks, 20,000,000 at 3*s.*	3,000,000
Total	14,000,000

Or something like four and a half times the amount of the capital stock. These amounts we feel assured are well within the mark; it would serve no purpose to exaggerate the sums

derived from our poultry stocks. The prices given, especially in the case of sales, are supposed to represent the first payments. The public are charged in all likelihood as much as three times the above amount of money for their home-grown eggs and poultry, and have to pay to foreign countries in addition a sum of 3,586,134*l.* per annum for an addition to their supplies. 70,000,000 chickens is only at the rate of two per head per annum for the population of 35,000,000 we set out with, and although thousands of persons will never in the course of the year partake of such fare, other thousands will each of them consume at least one per week, so that the number given is quite reasonable.

Fancy Fowl Breeding.—The breeding of fowls for exhibition, in other words, "to take prizes," at poultry shows, has of late years become very popular, and to some persons a source of money making. A fowl or fowls which carries off one or two of the more important prizes at once becomes of value; the eggs of the prize takers will sell at prices varying from 12*s.* to 20*s.* a dozen, whilst chickens of the breed will cost from perhaps half a sovereign to five guineas a pair. Of late years something like fabulous prices have been given for prize fowls and their progeny, as much in some instances as 50*l.*, 60*l.*, and even 100*l.*! Many persons concern themselves in this phase of fowl breeding, and some are now and then heard of who make handsome additions to their incomes by selling the eggs of their prize winning poultry. The mere gaining of a prize is not, it is proper to state, a source of remuneration except indirectly, because the cost of exhibiting is very considerable. The profits, as has been indicated, come from the enhanced fame of the animals which have been deemed worthy of a prize. In breeding and feeding for show the utmost pains must be taken, as also in selecting the birds to be exhibited as early as possible and so regulating their food and toilets as to make them look attractive. Not one bird perhaps out of each forty that may be hatched will be worth looking at as a show fowl, the competition being now so very keen that judges have a considerable choice placed before them at the chief poultry exhibitions. To show that there is no exaggeration in the prices indicated above, we quote from an advertisement now before us. "Mrs. —— has some splendid Houdan chickens for sale, various ages, from 3*s.* each to 5*l.*, some very good chicks at 1*l.* the pair." These exhibitors perform a good work, as through their exertions the stocks of poultry become improved, the fine fowls which they

breed become yearly less uncommon, and in time numbers of the different kinds make their appearance in the market in aid of the national commissariat.

Artificial Incubation.—As has been already mentioned, artificial incubators are now being extensively used for the hatching of eggs, thousands of chickens being now obtained by such means. There are not fewer perhaps than twenty different incubators now on sale, some of which have proved very successful in bringing out a large percentage of chickens. In many instances, when the eggs that have been obtained are really good, nearly eighty per cent. of them have been known to be hatched, and if ever poultry farming on a large scale is to become a feature of British industry the artificial incubator is bound to become an important factor in the account. The artificial hatching of chickens is a process of unknown antiquity. In the olden time in Egypt there were immense hatcheries, "mamals" they were called, capable of hatching from 40,000 to 80,000 eggs, and some of these are yet extant, the hatching process being still actively carried on at the village of Berme and neighbouring places on the Delta. The process of transforming the eggs into chickens is only known to a few families, aud the secret descends from parents to children, no outsider being permitted to know what is done or how it is done. Whenever an egg oven is constructed it is indispensable that it should be managed by a Bermean, and all who wish to go into the trade must first obtain a licence from the Aga of Berme, who charges at the rate of ten crowns for each permit. The trade in egg hatching has largely increased in Egypt during the last sixty years. There are now, we believe, over 400 of these vast hatcheries, each of which will turn out six or eight broods per annum, each brood ranging from 40,000 to 80,000. Persons bring their own stock of eggs and leave them to be hatched, the rule being that for every three dozen of eggs brought to the mamal two dozen of chickens will be returned. If a greater percentage of the eggs received should prove fruitful, the overplus becomes the perquisite of the master of the mamal. The artificial incubators now coming into use in connection with the rearing of poultry in this country are of a handy size, so that they can be used by persons whose trade in fowls is not of large magnitude. Those chiefly made are of a size to hatch about 100 eggs, but incubators of sufficient dimensions to hatch fewer or double the number are also manufactured, and are found to work very well. These egg hatchers are of

various kinds; some are heated by means of gas, others by hot water or steam. In connection with the various incubators, artificial mothers have also been devised of an ingenious kind for the newly hatched fowls; these have likewise proved successful.

Conclusion.—Economists of late years have been taking our farmers to task because they do not produce all the poultry and eggs which as a nation we require, and they have undoubtedly succeeded in directing such a renewal of attention to the subject as is bound to lead to increased endeavour in the way of more and more developing this branch of industry. It will be gathered from the foregoing exposition, imperfect as it may be considered, that what may be called an "awakening" on the subject has undoubtedly occurred, and that many persons are taking to the rearing of poultry who, but for what has been said, would never have thought of keeping any fowls. It is probable, therefore, that in the good time coming home grown poultry and home laid eggs will reach consumers in greatly increased quantities, and of better quality than has heretofore been the case. Fortunes, however, it is safe to say, will not be easily realised from fowl rearing, which, were it to be largely gone into by all and sundry, would in time so affect prices that it would not pay as an independent business. But there is room on nearly all farms where fowls are now feeding for feeding an increased number, and it is from more active work in these places that the national supplies of poultry and eggs can be most profitably augmented; it has been prophesied that at no distant date the public will be able to obtain their eggs at 4*d.* per dozen and their fowls at the rate of 4*d.* per pound, and in the interests of the consumers I trust the prophecy will be speedily fulfilled.

J. G. Bertram.

THE TELEPHONE AND ACOUSTICS.

SUPPOSE two rooms separated from each other by a wall so thick that words spoken in one room are inaudible in the other: suppose now that a hole two or three inches in diameter is made through the wall, and that against the face of the hole a disc of material such as thin iron or parchment is firmly fixed all round its rim, so as to close the hole in an air-tight manner. If a person in one room speak near the hole his speech will be distinctly audible to a person near the hole in the other room. The sounds heard in the latter room are clearly caused solely by the vibrations of the disc, which vibrations have been set up in it by the sound-waves impinging on it on the other side. The disc may in fact be regarded as the sound-producing body, so far as the sounds heard in the second room are concerned, and if by any other means vibrations precisely similar to those produced by the voice of the speaker could be set up in the disc, speech would be produced just as before. Not only is such a disc capable of producing by its vibrations sounds differing from one another as regards pitch and loudness, but the quality of the sounds produced may be almost indefinitely varied. The voice of a friend may be readily recognised, and this can only arise from some particular mode of vibration imparted to the disc, and transmitted by it to the air on the other side of it. For the quality of the sound to remain unaltered by transmission through the disc, the disc itself must be equally as ready to take up one kind and note of vibration as another, and it must have no unnatural period of vibration, or a vibration once set up in it must die out as soon as the cause exciting the vibration is removed.

It is impossible to form a disc absolutely fulfilling these conditions, and hence transmission of speech through a disc always imparts to it a peculiar quality differing slightly from that of the same speech heard directly. A tightly-stretched parchment, for instance, has a tendency to vibrate at some particular rate, and those sounds which correspond to this rate of vibration are more readily transmitted through it than others, and are also unduly prolonged, thus causing a decided alteration in the quality of the speech heard through it. The vibrations natural to a disc of thin iron held tightly round its rim are, on the other hand, damped almost immediately they arise, and consequently

the quality of the speech transmitted by thin iron is not greatly altered.

One method of causing a diaphragm by its vibrations to reproduce speech uttered at a distance is to connect it by means of a string passed through a hole in its centre, with the centre of another diaphragm vibrating under the direct influence of the voice at the distant station. When the string between the two diaphragms is stretched, speech may be transmitted through a distance of a hundred yards or more with perfect clearness. This curious fact has been known for more than two hundred years, but it appears to have been put to no practical use until lately. "Mechanical" telephones are now coming into use for transmitting messages through short distances, as, for instance, between a shop and a work-room at some distance apart, and they are likely to have an extended use for such purposes, as they are cheaper than speaking-tubes, and may often be used where speaking-tubes are not available. The discs of mechanical telephones are made of some stiff substance, such as strong cardboard or thin wood, they are six inches or more in diameter, and each is fixed by its rim into a shallow cylindrical box. They are connected by a strong wire tightly stretched. The wires may be carried round several corners without very greatly impairing the loudness of the sound. In "Nature" for July 30th, 1885, it is stated that in America a mechanical telephone has been brought out, the diaphragm of which consists of strips of willow wood closely woven together and varnished, and this telephone is said to transmit speech up to a distance of two miles!

The problem of telephonic transmission of speech by producing vibrations in a disc at one station by means of fluctuations in the intensity of an electric current arising from vibrations produced directly by speech at another, was first completely solved by Professor Graham Bell in 1876.

As early as 1860 Reis had attempted the solution of the problem, but had scarcely succeeded further than to enable him to reproduce correctly the pitch of the sound transmitted. His transmitter was formed by attaching to the middle of a vibrating membrane a small piece of platinum connected by a wire with one branch of an electric circuit, the other branch of the circuit being connected with a small platinum prong placed close above the piece of platinum, in such a way that contact was made and broken at every complete vibration of the membrane, thus causing an intermittent current to flow through the circuit.

For reproducing the sound at the distant station he made use of the fact, first observed by Page in 1837, that a slight click is produced every time the circuit of an electro-magnet is made or broken. This gives rise to a note of definite pitch when the circuit is opened and closed with sufficient rapidity. His receiver consisted of a knitting needle surrounded by a coil of covered wire; it was attached to a hollow stand of thin wood, and was covered by a resonance box for increasing the volume of the sound. This instrument was quite capable of reproducing musical sounds, but was not adapted for articulate speech. Consonants were pretty easily distinguished but not the vowel sounds. The failure of Reis's telephone to reproduce speech clearly arises from the fact that a make-and-break arrangement such as was here employed can only reproduce sounds correctly, so far as regards their pitch, and however different the quality of two sounds might be if the pitch of the two were the same, the sounds produced in the receiver would be alike.

The sounds produced in speech are of a highly complex character. Helmholtz and others have shown that the differences in the various vowel sounds uttered in the same pitch consist in the presence in varied degrees of intensity of one or more of the different harmonics of the note on which the sounds are uttered. In order that the vowel sounds may be reproduced telephonically, these harmonics must be present in the right degree of intensity in the sounds reproduced. This can only be effected when the variations in the intensity of the current which is to reproduce the sound are of a continuous and undulatory character. Superposed upon the main periodic variation in the current intensity which gives the pitch of the note, there must be other periodic variations corresponding to the different harmonics present in the sound to be reproduced. This essential condition is absent when the variations in the intensity of the current are produced by a make-and-break arrangement. An improvement in Reis's transmitter was made by Yeates, the well-known instrument maker in Dublin, who by introducing a small drop of acidulated water at the point where the current was rendered discontinuous caused the current, by the variable resistance thus introduced, to be more nearly of the undulatory character necessary for the reproduction of speech.

In 1874, Elisha Gray, of Chicago, invented a telephonic method of transmitting telegraphic messages, by means of which several messages might be transmitted simultaneously along the same

wire without interfering with one another. By means of a reed vibrating between a pair of electro-magnets and kept in vibration automatically, a current sent through the circuit was rendered intermittent. The receiving instrument consisted of an electro-magnet capable of setting in vibration a reed fixed to a resonating box, and of thus producing a musical note.

The reed being only capable of vibrating at a particular rate, and of giving rise to a note of definite pitch, was only thrown into vibration by fluctuations in the intensity of the current, arising from a transmitting instrument whose reed vibrated at the same rate. Each receiving instrument only responded to that transmitting instrument with which it was in unison. In this way as many as eight different transmitting and receiving instruments could be employed, and as many messages could be simultaneously transmitted along the same line. By employing the same principle as that here used, Gray constructed a musical telephone, by means of which he reproduced music played upon a piano at Philadelphia before a large audience in New York.

Professor Graham Bell first introduced his speaking telephone to public notice in June, 1876, at the Great Exhibition at Philadelphia. In the perfected form of the apparatus the transmitting and receiving instruments are precisely alike. Each consists of a permanent bar-magnet about four or five inches long fixed in a wooden or ebonite case, which forms a handle to the instrument. Round one pole of the magnet a small coil of fine covered copper wire is fixed. This coil forms part of the circuit. In front of this pole and almost touching it is placed a disc of thin iron held by its circumference to the case of the instrument. By means of a screw at the other end of the case the distance between the magnet and the disc may be nicely adjusted. The action of the instrument as a transmitter depends upon the fact discovered by Faraday, that when a piece of soft iron moves in the neighbourhood of a magnet, the change in the direction and intensity of the magnetism thus brought about gives rise to an electric current in a coil surrounding the magnet. If the motion of the soft iron be such as to give rise to a current which circulates in one direction then if the motion of the soft iron be reversed the direction in which the current circulates is also reversed. The strength of the current is dependent upon the velocity of the motion. If then a soft iron disc be thrown into vibration by the voice, currents in opposite directions will be alternately set up in the coil as the disc in its vibration is approaching and receding from the pole of the magnet.

The strength of the current at any instant being proportional to the velocity of the motion of the disc will be a maximum as the disc passes through the position it occupies when at rest.

Let us now consider how the instrument acts when used as a receiver. When a current is flowing in one direction round the coil surrounding the pole of the magnet the magnetism is increased and the disc approaches the pole ; when it flows in the opposite direction the magnetism is weakened, and the disc being partly released recedes from the pole.

Professor Graham Bell has given a very interesting account of his various experimental trials, and of the way in which he was gradually led to the beautifully simple instrument which constitutes his telephone in its perfected form. He appears to have begun to occupy himself with the electric transmission of speech in 1874, in all his experiments keeping in view the necessity of using electric currents of an undulatory character. His first idea seems to have been to make use of the same principle as that employed by Elisha Gray in his musical telephone. It is well known that if any vowel sound be sung into an open piano with the strings undamped, these strings which vibrate in unison with the constituent tones which go to form the vowel sound uttered will be set into vibration, and on ceasing to sing, the piano will be heard to give out the same vowel sound which has just been sung into it.

Now Bell thought that if two electro-magnets at the two ends of a circuit had fixed before each of them a series of steel prongs or wires of different lengths, then, when a sound was uttered near one of them, certain of the prongs or wires would be set into vibration, and by their vibrations near the magnet would cause variations of corresponding frequencies in the current circulating through the circuit, and that these variations in the current would at the receiving instrument set in vibration corresponding prongs or wires, and that sounds would thus be produced similar both in pitch and quality to those spoken into the transmitter. Considerations of expense he states prevented him from carrying out this idea. He then tried the effect of attaching the armatures of the electro-magnets of his transmitting and receiving instruments to the centre of circular membranes, so that the vibrations of the membrane vibrating under the influence of the voice might give rise to similar vibrations in the membrane of the receiving instrument. The

transmitter of the instrument he exhibited at Philadelphia was of this kind, whilst the receiver was a disc of iron fixed only at one part of its rim with its centre opposite the poles of the electro-magnet carrying the current.

By replacing the membrane and attached armature by a disc of thin iron, and using permanent magnets instead of electro-magnets, at the same time dispensing with a battery current, Bell arrived at the form of instrument as he finally constructed it. The marvellous simplicity of this final form of instrument is its most striking feature. To use the words of Sir William Thomson in his address before Section A of the British Association in 1876: "Who can but admire the hardihood of invention which devised such very slight means to realise the mathematical conception that, if electricity is to convey all the delicacies of quality which distinguish articulate speech, the strength of its current must vary continuously, and as nearly as may be, in simple proportion to the velocity of a particle of air engaged in constituting sound."

The electric currents to which the vibrations of the disc in a Bell telephone give rise are of extremely small intensity. Several estimates have been made of the intensity of the currents concerned in the transmission of speech through this instrument. To determine the least current capable of producing audible effects, Professor Tait proceeded thus. He produced currents by causing a tuning-fork to vibrate in front of a magnet, and noted by means of a microscope the amplitudes of its vibration at the moment when the sounds produced ceased to be audible in the receiving telephone. He then placed a very delicate galvanometer in the circuit, and determined what deflection was produced by a measured motion of the fork, and finally he measured the deflection produced in the same galvanometer by a small electromotive force of known magnitude. The data thus obtained enabled him to calculate the strength of currents which were just capable of reproducing sound. He found that they were no greater than what a Grove cell would send through a million megohms, or that they were about a thousand million times less than the currents used in ordinary telegraphic work. M. Bosscha has estimated that the displacement of the centre of the diaphragm of the receiving instrument when sounds are just audible in it, must be somewhere about the millionth of a millimètre, or a displacement not much exceeding the length of a wave of light.

The possibility of transmission of sounds through the Bell telephone is due to the wonderful sensitiveness of the ear to vibration in the air of even the smallest amplitude. That the amplitude of the aërial vibrations to which the ear is sensitive must be of extreme smallness may be readily seen by such considerations as the following :—A whistle blown with a very moderate exertion of force would, on an open plain on a still night, be easily heard in all directions at the distance of half a mile. Since sound travels at about the rate of a mile in five seconds, it follows that in two seconds and a half the whistle has set up vibrations at the rate of many hundreds of vibrations per second throughout a mass of air contained in a hemisphere of half a mile radius. Now the mass of air in this hemisphere is easily calculated, and the result of the calculation is that it is considerably over a million tons. Each particle of this enormous mass has been set in motion at the rate of many hundreds of wave amplitudes per second by a very slight force exerted during the space of only two and a half seconds. The average amplitude of vibration of the air particles throughout the mass, and, a *fortiori*, the amplitude of vibration of the air particles at the extreme distance must consequently be extremely minute.

It may be mentioned here that Lord Rayleigh in 1877 arrived at a rough estimate of the least amplitude of air vibration capable of producing audible sounds. By causing a whistle to sound by blowing air through it at a known rate from a vessel containing air at a known pressure the energy expended per second was determined. By supposing that the energy thus expended was spent altogether in producing sound vibrations, and by finding the greatest distance at which the whistle was distinctly audible, a superior limit for the amplitude of vibration of the air particles at this distance was arrived at. The result of his calculation was that, for the whistle in question, the amplitude of vibration of the aërial particles was less than the millionth part of a millimètre, a result in agreement with M. Bosscha's estimate of the least amplitude of vibration of a telephonic disc capable of producing sound.

Professor Graham Bell filed his application for a patent at the United States' Patent Office on the 14th of February, 1876, some time previous to exhibiting it at Philadelphia. It is a curious fact that upon the same day and only two hours later drawings and specifications of a speaking telephone were presented in the form of a caveat at the same office by Elisha Gray.

Gray's drawings show clearly that his receiving instrument was essentially the same as Bell's. He, however, proposed to use the current of a pile, and to render this current variable by causing the vibrations of the transmitting diaphragm to introduce a variable resistance into the circuit. The variable resistance was to be produced by fixing to the centre of the transmitting diaphragm a platinum wire dipping into a vessel filled with liquid, and nearly touching another wire projecting through the bottom of the vessel.

It appears, however, as the result of subsequent inquiry, that at the date of depositing his caveat this instrument had not been actually constructed.

Professor Bell independently devised and made in March of the same year an instrument with a variable liquid resistance essentially the same as Gray's, and on May 10th this instrument was the subject of a communication to the Academy at Boston, and it was afterwards exhibited with his other apparatus in June at the Exhibition in Philadelphia.

There can be no doubt that the credit of having first made a successful speaking telephone is due to Professor Graham Bell.

It was soon seen that Bell's system, in which the transmitting and receiving instruments were alike, and in which the energy of the sound given out by the receiver was derived directly from the voice of the speaker, could never be capable of reproducing speech in anything but a weak manner, however clear the articulation might be. A method was accordingly sought for, in which the energy of the sound given out by the receiver should be derived from some extraneous source, such as a battery current, and should only be called into action by the vibrations communicated to the transmitter.

Edison very quickly devised a method of effecting this improvement.

Having a year previously discovered, and put to practical use in another invention, the fact that a remarkable variation in the resistance of an electric current is produced in lampblack by variation in the pressure to which it is subjected, the resistance being diminished with increase of pressure, and restored to its original value when the pressure is again taken off, he constructed a transmitter in which a small button of lampblack, forming part of the circuit of an electric current, was placed against the centre of the vibrating diaphragm, and was thus subjected to the necessary variations of pressure. This trans-

mitter, used in connection with a Bell telephone as receiver, gave a better result as regards loudness in the transmitted speech. Edison also invented a loud-speaking receiver, which, however, does not appear to have come into practical use, possibly on account of the disagreeable quality imparted to the speech reproduced. Clearness of articulation is of much more importance than loudness, beyond a certain point, in all the practical purposes for which the telephone is at present used. The principle upon which his receiver acts depends upon the fact that when a current is transmitted between a metal point and a surface moistened with an electrolyte, the friction between the two when the surface is in motion beneath the point is diminished in proportion as the intensity of the current is increased.

By causing a chalk cylinder saturated with a solution of caustic potash and acetate of mercury to revolve beneath the end of a platinum prong pressing upon it, the other end of the prong being attached to the centre of a mica disc, the disc is thrown into vibration sufficient to cause it to give out loud sounds whenever rapid variations in the intensity of the current are produced in the circuit by the transmitter.

In 1878 Professor Hughes invented the microphone. This instrument depends for its action upon a phenomenon discovered by Hughes, but which had been previously noticed in 1856 by Du Moncel, that the resistance at the point of contact of any substances across which an electric current is passing depends upon the force with which the two pieces press against each other, the resistance being diminished as the pressure is increased. The alteration in resistance is especially marked when the pressure is slight, or when the contact is "loose."

Professor Hughes discovered that when the pressure is slight, the rapid variations produced in it by sound are sufficient to cause variations in the current capable of giving rise to loud sounds in a telephone inserted in the circuit. He found that sounds were produced whatever the nature of the pieces in loose contact; but contact between pieces of carbon were found to give much stronger effects than those given by metals.

By lightly resting a small rod of carbon against two other pieces of carbon fixed to an upright piece of thin board, or in any other way so arranging contact that it shall be easily affected by aërial vibrations, an efficient microphone may be constructed.

It often happens that the contact between the carbon pieces of a microphone is so slight that speech momentarily breaks the

circuit altogether. A jarring noise and loss of clearness of articulation in the receiver at once shows when this is the case. The carbon telephone of Edison is essentially a microphonic transmitter.

The variations in resistance in his telephone have now been shown to arise entirely from alterations in pressure at the points of contact of the carbon piece, and not to be due, as was at first supposed, to a variation in the conductivity of the carbon, brought about by variations in the pressure.

Mr. Shelford Bidwell has suggested some reasons for the superiority of carbon over metal for microphonic contacts. First, a strong current it is well known often causes two pieces of metal to stick together through fusion at the points of contact. Now, even slight currents may have the same effect in a small degree. Secondly, it has been found that the conductivity of carbon increases with rise of temperature, the opposite being the case with metals. Now, increased current produces increased temperature, and in the case of carbon contacts, this increased temperature tends to increase the current still further since it increases the conductivity. But with metal contacts there is an antagonism between the increased current and the consequent increased temperature. Thus the tendency to variation of current is greater with carbon contacts than with metal contacts.

A very large number of transmitters with carbon contacts have been invented. Those of Blake and of Crossley are largely in use in England.

Another important improvement in telephonic transmission first suggested by Edison remains to be mentioned. It consists in using induced currents. The current rendered variable by the transmitter is made to traverse the primary circuit of an induction coil, the secondary circuit being in connection with the line wire and the receiving instrument.

As the current in the primary circuit increases and diminishes, alternating currents of much greater tension are induced in the line circuit, which are more effective in actuating the receiver. But another great advantage of this mode of working arises from the fact that the total resistance of the primary circuit can be kept low, and thus variations in the resistance caused at the carbon contacts will have a greater effect in altering the intensity of the current than they would have if the total resistance were as large as it would be if it included the whole circuit.

As a transmitter, the Bell telephone is almost entirely super-

seded by some form of carbon transmitter. As a receiver, the original Bell instrument is still largely used, and Mr. Preece, the well-known electrician of the Post Office, states that for clearness of articulation nothing has been made which surpasses it. Many modifications of the Bell instrument have been devised, having for their object increased loudness of reproduction, and several of these are in use. In the Post Office the Gower-Bell loud-speaking instrument is used; it differs chiefly from the original Bell in the form of the magnet, which is of a powerful horse-shoe shape, supporting on its two poles small pieces of iron on which the bobbins carrying the coils are fixed. The whole instrument is inclosed in a box, to which is attached a flexible acoustic tube.

The Ader receiver is another modification of the Bell telephone. It is almost universally used in Paris. The magnet is of a ring-shaped form, the two poles being each surrounded by a small coil projecting out so as to be as nearly as possible opposite the centre of the vibrating disc. On the other side of the disc, *i.e.*, on the side near the ear, there is a thick ring of soft iron which by its inductive action has the effect of increasing the magnetic attraction between the magnet and the disc.

Another receiver deserving of separate mention, differing as it does entirely in principle from the Bell telephone, is the speaking condenser. Varley in 1870 discovered that a condenser formed of sheets of tinfoil separated from one another by paper, the even sheets overlapping the paper on one side so as to be in metallic contact with one another, and the odd sheets overlapping in the same way on the other side, would when rapidly charged and discharged give rise to a loud sound. When a heavy weight was placed upon this condenser the sound was not destroyed, but only weakened, and at the same time rendered more harmonious. The explanation of these sounds is probably to be found in the electrostatic attraction which arises between the oppositely electrified sheets of which the condenser is composed.

A condenser of this kind with sheets only about 2½ inches square, set in a flat box with a circular opening in one side of it, forms the speaking condenser of Dr. Herz.

Dolbear's speaking condenser is still simpler. Two metallic discs with nothing but air between them forms this condenser. The discs are as close together as possible, being kept apart and insulated from each other by a thin ring of ebonite. A screw pressing on the centre of one of the discs prevents it from

vibrating, and can be used to bring it up as near as possible to the other disc. The two discs are connected with the two ends of the secondary wire of a powerful induction coil, the primary wire of which forms part of the circuit of the transmitting instrument.

The extreme delicacy of the telephone, and the ease with which it is affected inductively by currents in neighbouring circuits, is one of the chief practical sources of difficulty in telephonic communication. The only effective method of overcoming this difficulty is by using a double wire so as to have a complete metallic circuit for the currents, instead of, as is usual in telegraphic circuits, using the earth for the return branch.

By keeping the two wires as close together as possible, and causing them to twist round each other, the inductive effects on the going and returning currents are equal but opposed, and thus neutralise each other.

In telephonic systems where the double wire is not used there is apt to be a cracking, hissing, and bubbling noise, which is sometimes very annoying. Messages also on neighbouring wires may often be heard. A telephonic circuit in which the earth is used for the return current is also apt to act as a return circuit for portions of the currents of other circuits using the earth, and this also gives rise to confusing noises in the receiver.

The distance to which messages may be transmitted by the telephone depends largely upon the kind of circuit employed. The chief difficulty experienced in sending messages to a distance is caused by the loss of distinctness arising from the circuit acting electrostatically as a condenser. A small electric current in passing into the wire gets used up in charging the wire, which acts as the inner coat of a Leyden jar, whilst the earth, neighbouring wires, and other conducting bodies near the wire act as the outer coat. This source of difficulty is of course far the greatest in submarine communication. It is least for overground wires supported on high poles. Telephonic communication can however be carried on through many miles of submarine cable. Thus Mr. Preece states that speech can be carried on with ease between Dublin and Holyhead through a cable 67 miles long. On overground wires on high poles away from other wires speech has been transmitted 500 miles.

Telephonic exchanges are formed for the purpose of establishing communication between the different private telephones fixed in the houses and offices of the subscribers to the Exchange. Separate wires connect the different instruments with a central

office, in the "switch" room of which communication between the different subscribers who wish to converse is effected. Young women are generally employed in this room. When a subscriber, A, wishes to communicate with another, B, he begins by turning the handle of the call instrument. This handle works an electro-magnetic machine which produces a current sufficiently strong to release the detent of an electro-magnet, and this causes a flap to fall exposing the number of the subscriber A, and at the same time rings the call bell. The attendant then fits her telephone wire into the hole belonging to A's number, and after hearing from him that he wishes to be connected with B, proceeds to call B's attention by ringing his call bell, and after telling him that A wishes to speak to him makes the connection by inserting the plugs at the two ends of a flexible wire into two holes, one belonging to A's number and the other to B's. When the conversation is at an end, A and B replace their instruments in the catch which holds them, and again ring the call bell. This again sets free the flaps, which at the commencement of the conversation had been put back by the attendant, and lets her know that the connection may be removed.

Public telephones placed in different parts of the town enable anyone, whether a subscriber or not, on payment of a small sum, to communicate with any of the subscribers to the Exchange. In a large district branch offices and switch rooms are conveniently employed. In case a subscriber connected with the branch office wishes to communicate with another who is connected with the central office, connection has to be made between the suburban and the central office, and thence with the other subscriber. If there is only one wire between the two offices only two persons can use it at the same time, and some delay may occur before connection is made; but when two subscribers are connected with the same office they may be put into communication at any time. It is stated that each subscriber on an average uses his instrument about ten times a day; but this will vary with the size of the Exchange, the greater the number of subscribers the more frequent will be the occasions on which an instrument can be used.

During the decade which has passed since the invention of the telephone the spread of telephonic exchanges in all parts of the world has been enormous, and their number is still increasing very rapidly. Mr. Preece states that in America, on December 31st, 1886, there were 353,518 telephone and microphone trans-

mitters in use and under rental. The number of exchanges in England at that date was 184; there were 19,784 subscribers, and 101,000 telephones in use as royalty-paid receivers and transmitters.

The telephone has several other uses besides that of transmitting speech. As a detector of small electric currents it is more sensitive than the most delicate galvanometer, and has been used for this purpose in many scientific investigations. Thus Professor Hughes uses it as a detector in connection with his induction balance.

At the end of the year 1877, Mr. Edison invented an instrument which he named the phonograph. This instrument has not fulfilled the expectations which were formed of it. The instrument consisted of a cylinder with a close spiral groove cut in it. In the axle of the cylinder a screw was cut of the same pitch as the spiral groove, so that, as the machine was turned, the cylinder moved slowly forward in such a way that a fixed point opposite the groove always remained opposite it as the instrument turned round. Opposite the cylinder was a circular diaphragm of ferrotype plate with a small pointer projecting from its centre, so as to be opposite and close to the groove of the cylinder. The diaphragm was furnished with a mouthpiece for concentrating the voice, and so amplifying the vibrations imparted to the diaphragm.

A sheet of tinfoil being carefully wrapped upon the cylinder, and the cylinder then turned whilst speech was uttered loudly into the mouthpiece, the metallic point indented the tin foil, leaving a record of the vibrations of the diaphragm upon it. It was then only necessary to slightly remove by means of a screw the diaphragm whilst the instrument was being turned back to its original starting point, then to bring back the diaphragm to its original position to fit upon it a large cardboard cone for amplifying the sounds produced. When on turning the instrument the words uttered were reproduced with a distinctness sufficient for recognising what had been spoken.

It was next to impossible to remove the tinfoil and replace it again with an accuracy sufficient for reproducing the sound. Mr. Edison had great hopes of so improving this instrument as to make it of much practical value, especially for the purpose of letter-writing.

His idea appears to have been to produce by a phonograph a record of words spoken into it, which record on being sent to its

destination, and being fitted upon a phonographic machine should be made to reproduce the words spoken. These expectations have not been realised, and very little is now heard of the phonograph.

Another instrument which, like the phonograph, has as yet not proved of any practical value is the photophone, the invention of Professor Graham Bell and Mr. Sumner Tainter in the year 1880. This instrument bears the same relation to the telephone as the heliograph bears to the telegraph. By its means a message spoken into a transmitting instrument so acts upon a beam of light reflected from it to the distant stations as to make the receiving instrument cause a telephone in connection with it to reproduce the words spoken.

The transmitter consists of a disc of thin silvered glass or mica, forming a mirror which in its position of rest was plane, but on being thrown into vibration by the voice becomes alternately convex and concave. A beam of sunlight reflected from this mirror is concentrated at the distant end by means of a large concave reflector, so as to converge all the light received on to a selenium receiver. Selenium is a substance the electrical conductivity of which has been found to be readily affected by light falling on it. The selenium receiver forms part of the circuit of an electric current produced by a battery, and in the same circuit a telephone is inserted. When by the voice of the speaker the transmitting mirror becomes curved, it no longer transmits the beam of light incident in such a way as to concentrate all the light upon the selenium receiver. The resistance of the circuit containing the selenium receiver becomes changed, and the consequent changes in the current produced by the battery causes the telephone to reproduce the sound. This instrument may be called the articulating photophone, in contradistinction to another instrument devised by Mr. Bell, to which he gave the name of the musical photophone.

This latter instrument is simply a form of apparatus devised for demonstrating a remarkable phenomenon discovered by Mr. Bell, namely, that a very large number of substances in the shape of plates on being subject to an intermittent beam of radiant heat emit a musical note which corresponds in pitch to the period of intermittence.

There is little doubt that the cause of these sounds is to be ascribed to the rapid deformations of the plate produced by the alternate expansions and contractions of that side of the plate

which is exposed to the intermittent beam. Lord Rayleigh subjected this question to mathematical calculation, with a view to ascertain whether the motions of the plate induced by these means were competent to explain the sounds produced. He found that for an iron plate $\frac{1}{5}$th of a millimetre in thickness and 6 centimetres in diameter subjected to intermittent sunshine, the period of intermittence being $\frac{1}{250}$ of a second, the induced amplitude of vibration would be about $\frac{5}{1000000}$ of a centimetre. Such an amplitude of vibration would, as we have already seen, communicate to the air vibrations capable of being perceived as sound.

In connection with this discovery of Professor Graham Bell's, should be mentioned Professor Tyndall's experiments on the production of sound by exposing various vapours in small bulbs connected with the ear by a flexible acoustic tube to intermittent radiant energy. Professor Tyndall found that a large number of vapours and gases when thus exposed to an intermittent beam of strong light or heat gave rise to musical notes which varied in loudness according to the nature of the gas or vapour experimented with. Those gases and vapours which by other means had been proved to be most absorbent of radiant energy were found to be the most powerful producers of sound. The origin of the sounds thus produced was shown to be the rapid expansions and contractions produced by the intermittent beam.

ARTHUR S. DAVIS.

HORSE BREEDING.

THE slow advance of reforms, how much soever they be needed, is proverbial, and it cannot be said that the change in the manner of procuring army remounts has been any exception to the rule. This, however, is rather "heading the fox," as the new experiment of purchasing army horses through the remount committee, instead of leaving the regimental horse supply to the commanding officers of regiments, is the result of the step taken by Government in furtherance of horse breeding. The new departure, however, is in itself likely to affect the breeder for good; and as, if properly carried out, it will create a market for young animals, while also tending to divide the often exorbitant gains of the middleman between the farmer and the country, the plan of dealing direct with the breeder may well take precedence of all other considerations.

Now, to hark back a little, the horse breeding question comes intermittently before the public, and has done so for many years. Every kind of advice has been offered, every device suggested, and contradictory opinions have been given; one controversialist proves on paper that breeding hunters and carriage horses is a remunerative occupation; another avers that after for years following the most enlightened system he is as positive as positive can be that breeding is a delusion, and a short cut to heavy losses. There was a time when Mr. Chatterton told us that "Shakespere spelled ruin;" but Mr. Irving has shown us that the ex-manager's statement is not universally true. Similarly we trust, for everybody's sake, that in the future breeding horses may not invariably prove a losing speculation, as within the last year or two a good deal of money has been expended in the attempt to encourage farmers to breed hunters, hacks, and carriage horses. As I have just stated, the breeding question has for generations cropped up every now and again; it is, therefore, difficult to select any particular period as having given rise to considerations which have at length brought about the present state of affairs. Space forbids a notice of all the controversies to which the subject has given rise, and as it is necessary to make a beginning somewhere, it will be convenient to confine these remarks to within a comparatively recent epoch.

While Lord Rosebery, then Lord Dalmeny, was an under-

graduate at Christ Church, Oxford, he, about 1869, bought the racehorse Ladas, and from that time turned his attention to horses. At his instance a Select Committee was appointed in 1873 to inquire into the question of the horse supply; but beyond proving that we were largely dependent upon foreign countries for our machiners, and that breeding was falling off in England, no very valuable results flowed from the labours of the Committee. Our weakness was exposed, but no remedy was suggested or adopted. And so things went on. Correspondence took place in the papers; the subject dropped, and was revived again when the occurrence of some event suggested a renewal of argument. Meantime, although here and there a country gentleman or two kept a sire for the use of the neighbourhood, nothing was done to stimulate breeders as a class, unless we except the growth in the number of horse shows held annually. But in a short time it was obvious that they would do nothing to benefit the horse supply; while so far as thoroughbred sires were concerned, the classes for them were miserably filled, partly because the prizes were too small to make it worth the while of owners to show their horses, and partly because the shows took place at the wrong time of year. Still, with this sort of encouragement breeders had to be content until the Hackney Society, and the Hunters' Improvement Society were founded, the former in 1883, and the latter in 1885. One does not forget the excellent work accomplished by the Shire Horse Society, but it does not concern itself with "light-legged" horses. While the Hackney Society took upon itself the task of looking after the interests of the hackney stallions and mares—alas! how the number of the latter has fallen off of late years—the Hunters' Improvement Society turned their attention to that class of horse indicated by the name of the Association. Their first step was to hold a kind of a "side show" of hunter sires at the Hackney Exhibition, at the Agricultural Hall, and to offer prizes to the most successful upon the condition that the winners of premiums should serve a certain number of farmers' mares at a fee not exceeding 50*s*. Farmers are thus assured of sound sires at a moderate figure; and the Royal Agricultural Society, and subsequently the Government, have followed on in much the same lines. Those who have followed up the question of breeding in all phases, know that Government have for a long time been asked to lend their aid, yet no sign was made, and possibly nothing would have been done now, were it not that Colonel Ravenhill and

others have pointed out how badly off the army is for horses, and how difficult it would be to form the proper complement in the event of England being engaged in a war. Another circumstance, too, tended to show the paramount importance of attempting to breed the numbers we require. Foreign Governments some time ago issued an order that no horses should be exported. The result of this restriction has been that whenever a foreigner wanted a horse he has had to come to England to buy it, and during the present year (1887) English dealers have been doing a brisk export trade; but if we had suddenly wanted a number of horses, where should we have found them?

Whenever the clamour for State assistance has been raised, there has always been a conflict of opinion as to the form it should take. Some have been in favour of establishing breeding studs formed on the Continental plan; but that would have been a very costly way of going to work, and there are several well-grounded reasons against it, quite apart from the money needed to carry them on. In the year 1884, the English Diplomatic Agents at Paris, Berlin, and Vienna forwarded to the Foreign Office reports on the horse breeding depôts in their several countries. From those reports we find that the horse breeding establishments in France are maintained in accordance with a law passed in 1874. The cost of keeping up the "École des Haras" and twenty-two stallion depôts is about 270,000*l.*; the whole cost is above 325,000*l.*, but the fees for the hire of stallions reduces the amount to the first-named sum. Austria expends about 140,000*l.* a year on horses and horse breeding. Something like 80,000*l.* is voted annually for the encouragement of horse breeding; promising young horses swallow up another 16,000*l.*, and the balance is spent in other ways. Hungary votes an annual sum of about 116,500*l.*; but this sum does not represent the whole cost of horses to the State, because, as in Austria, collateral matters mop up a good deal. The Prussian Government grants 45,000*l.* annually as a buying fund; but the maintenance of the several establishments involves a further cost which after deducting receipts obtained by sale and hire, comes to about 34,000*l.*; so that, in one way and another, horses cost something like 80,000*l.* a year in Prussia. A large proportion of these sums is taken up in salaries for the different officials; but the 10,000*l.* now voted by Parliament for the encouragement of horse breeding in England and Ireland seems as nothing when compared with the liberal sums cheerfully found by Con-

tinental nations. On the other hand, it is to be noticed that France, Prussia, Hungary, and Austria, by reason of their establishments, do not have to buy in open market every time they need a horse to carry a soldier. Still, on the English system no salaries have to be paid, and a saving is therefore effected; though, as a set-off, we have not the stock possessed by foreign nations. About eighteen months ago, the American Department of Agriculture at Washington made a report, from which it appeared that, at the beginning of the year 1886, there were less than 2,000,000 horses in Great Britain and Ireland, while Germany had 4,000,000; France 3,000,000; and Austria 1,500,000; while no less than 23,000,000 stood to the credit of Russia. At the end of February, 1873, Lord Eustace Cecil said, in the House of Commons, that whereas the Prussian Army had a horse to every four men, the proportion in the English Army was one horse to thirty men.

That the Government acted wisely in keeping clear of breeding establishments with their large staff of officials, is admitted by all whose opinion is entitled to respect. By making an annual grant, and affording facilities to breeders, they have not only saved money, but have taken a course which may eventually induce farmers to utilize the conveniences for breeding which they already possess, as every farmer could breed one or more colts, according to the size and nature of his holding, without going to any further expense for labour and rent. What the result of the different attempts to encourage breeding may be time alone will show; but this will not be thoroughly successful unless the majority of farmers can be induced to breed a colt or two as a matter of course, just as they keep chickens or pigs. Breeding on a large scale calls for special qualifications, and, moreover, has the disadvantage of involving the keep of many more mares than can be used for farm or light work; while, when the stock becomes numerous, men must be engaged to look after it, and their wages must come out of the profits—if any—or augment the loss in bad years. To advise a farmer to make his farming of second importance to horse breeding is to give him very questionable advice; to urge him to breed on a small scale, and as auxiliary only to his occupation as an agriculturist, is to ask him to make trial of an experiment which, if carried out with judgment, will not necessarily involve great loss, if it does not bring in a great profit. Up to the age of two or three years young stock would not cost a farmer much to keep. Their

hay and oats need not be of the most saleable quality; and, although they will be all the better for liberal diet, they need not be forced like some of the thoroughbred yearlings one sees at Newmarket or Doncaster. The ordinary farm buildings will afford all necessary shelter; while a fairly intelligent carter, or the farmer, or his son, should be equal to handling the youngsters from the beginning, and getting them to lead.

Now although the Hunters' Improvement and Royal Agricultural Societies and the Government have all adopted the plan of giving premiums to approved stallions, their operations differ on other points. The Hunters' Improvement Society annex no stipulations as to locality to their awards; the winning sires may stand at their owners' stable, in whatever part of England it may be. The Royal Agricultural Society, on the other hand, stipulates that the winners of the 200*l.* premium shall stand and travel in certain specified districts in the neighbourhood of the place at which the annual show is held. What the Government intend to do in England is not yet finally settled; but for the purpose of the grant in Ireland, that country has been cut up into districts, and in the distribution of sires the wishes and convenience of owners is to be consulted as far as possible. After reading all that has been written on the subject, and after having had the advantage of talking to and corresponding with many experienced breeders, I am inclined to think that it would be advisable to cut away all restrictions as to locality. In the first place many owners do not care to send valuable horses away from home. If "the master's eye makes the horse fat," it is equally true that it tends to keep him from coming to harm. The most faithful servant is forgetful sometimes, and it cannot be denied that a man does run a risk when he sends a valuable sire beyond the range of his own eye. Then again by sending a horse away an owner might lose his own local connection; while keeping a horse at a distance involves rent of stable and other costs which would not be incurred at home. Having regard, therefore, to these and other considerations, it is possible that a premium of 100*l.* with no stipulation as to locality would be more acceptable than one of twice that amount given on the understanding that the winner must visit a particular district. On the assumption that 100*l.* with no restrictions would bring together as good a lot of horses as 200*l.* with restrictions, the 1,000*l.* voted by the Royal Agricultural Society would serve to subsidise ten sires instead of five as at present. On the other

hand, by assigning certain districts to prize-winners, the Royal Agricultural Society ensures the several places being visited by horses of unquestioned soundness. Some of these districts may be already very well off for sires, while in others the supply may be scanty, and breeding an almost forgotten industry. In such a case the importation for a season of a good sire might give an incentive to horse breeding; but, on the whole, I think unrestricted animals will work best in the long run, for after all the benefit to a district of having a certificated sire is, under present arrangements, of only a season's duration, and if the neighbourhood is short of suitable sires the breeder will be as badly off as ever in the next season, while, if there be no lack, the advantage of sending down the prize-winner will not be as great as if he had gone there to "supply a long-felt want," as the phrase runs. Still the experiment of the Royal Agricultural Society was a success, and at the Royal Show we learned that the five premium winners had been well patronised by breeders, both at the lower fee by farmers, and at a higher one by other breeders.

So far as Ireland is concerned, the yearly sum of 5,000*l.* is granted to the encouragement of breeding cattle and horses, the money being paid to the Royal Dublin Society, who are to act as trustees in the administration of the money. Of the 5,000*l.*, 3,200*l.* is devoted to the furtherance of horse breeding, and sixteen thoroughbred sires receive 200*l.* each. The awarding of these premiums took place in August last, on the occasion of the Great Horse Show at Ball's Bridge, and the "Service Premium" class attracted no fewer than sixty entries, and it was from this class that the subsidised sires were selected. In the House of Commons, Mr. Tim Healy was naturally solicitous for those tenant farmers who have embraced the faith of the National League, and he asked the Chancellor of the Exchequer whether he was aware that the Dublin Society was controlled entirely by landlords, and inquired what precautions would be taken to secure to Nationalist members of the League their fair proportion of the grant? The Chancellor of the Exchequer had no reason to doubt the impartiality of the Society, and, in pointing out that the benefits of the grant were confined to farmers of or under 200*l.* valuation, explained that tenant farmers would no doubt be represented on the local committees which would be formed to secure the efficient working of the grant.

As already stated, the details of the scheme for England are

not yet fully settled; but the 5,000*l.* annually voted will be under the control of a Board at which the Master of the Horse will have a seat. In order to raise the 5,000*l.* per annum, the 3,000*l.* odd hitherto given in Queen's Plates will henceforth be devoted to the new scheme, and the balance will be added. The abolition of Queen's Plates has naturally given rise to a certain amount of discontent among racing men, and writers on turf topics have wielded their pens to oppose it. The change will no doubt affect the smaller free and open meetings at which the Queen's Plate was often the chief race; but it must be remembered that these prizes were originally given not so much to encourage horse-racing as to improve the breed of horses, and it was thought at the time that no more efficient way of achieving that end could be devised than by giving prizes for two-mile races, for stakes were not then as large as they have since become under the *régime* of gate-money meetings. The time, however, has long gone by since a Queen's Plate can be said to have encouraged horse breeding in the very slightest degree, so Government have only perpetuated the original intention in effecting the transfer of the money from the post to the paddock.

The foregoing is a slight outline of what may be termed public schemes for the encouragement of horse-breeding. Hand-in-hand with these walks private enterprise. A good many country gentlemen keep sires for the use of their tenants and neighbours at more or less moderate fees, while in a few instances some further inducement is held out to breeders. The Compton Stud Company, for instance, now located near Templecombe in Dorsetshire, offer prizes for the best youngsters got by their horses; and at the last Sherborne horse-show these classes were well filled. Other owners of stallions give like encouragement, while the past season has been noticeable for the number of foal-shows held, principally in the north of England, and for the increasing number of entries in the two- and three-year-old classes at horse-shows. Mention has been made of the Hackneys and Hunters' Improvement and Shire Horse Societies; but there are one or two others which deserve mention as having an influence more or less direct upon the breeding of horses suitable for hunters, harness horses, and horses suitable for military purposes. The Clydesdale Society has been in existence about ten years, and the Cleveland Bay Society about three years. The mares of neither of these two breeds are likely to be found as the dams of hunters, but, without going into the various theories as to

what kind of mares are really suitable to be dams of the different kinds of light-legged horses, it is only fair to say that a great many half-breds of one sort and another probably trace back to Shire, Clydesdale, Cleveland, or other strains.

The enumeration of these types reminds one that, after all, the thoroughbred is not the only stamp of horse to be thought of. He is, of course, at the foundation of all our hunters, and many of our harness horses; but the hackney stallion must not be lost sight of, as many of our high-stepping phaeton horses are by sires of this breed. Since the intention of the Government in connection with the horse breeding grant was first made known, the admirers of hackneys, Clevelands, Shire horses, &c., have several times pointed out that these breeds have claims on the country quite as righteous as those of the hunter; and I should not be in the least surprised to find that a good deal of discussion takes place on the question. That the above types of horses are deserving of encouragement is an undisputed fact; but, as I understand the matter, the idea of the Government was to increase the supply of horses which would be useful for cavalry and artillery purposes, and those charged with the duty of administering the money will probably use their own discretion as to whether any sires other than thoroughbred ones should partake in the bounty. Here is a question which admits of no little argument, and, if called upon, the respective Societies could make out a very good case in favour of the breed in which they are respectively interested; but a discussion as to how far these types enter into the composition of the hunter and horse fit for military service is best postponed until we speak about the mares. Of course, so far as the breeder is concerned, all breeds are worthy of encouragement; but if, as I understand, the first idea of the Government in making this 5,000*l.* grant is to increase the supply of horses fit for the ranks and the guns, the matter will wear a slightly different aspect; yet inasmuch as the half-bred is not a distinct breed like the thoroughbred for example, there may be a good deal of argument as to the proportions of the different types in the composition of the hunter, trooper, and artillery horse.

Notwithstanding the many theories which have been put forward as to the lines upon which horse breeding should be carried on, it is obvious that the first step to be taken is the disposition throughout the country of big-boned, sound, and well-made sires, and it is to this end that the aforementioned

Societies and the Government are working. In byegone times it was by no means an uncommon thing for a "cocktail" to travel the country, and for the man in charge to foist him off upon those who had not the stud-book at their fingers' ends as a thoroughbred. Then again every one who has lived much in the country must have seen wretched specimens of the thoroughbred horse travelling in out-of-the-way places. I can call to mind three, two of which were not only ill-made but unsound, while the third turned out his toes to an inordinate extent, and nearly all his stock inherited this defect. Nor has Ireland been free from the curse of worthless and unsound sires. If, then, both in England and in Ireland tenant farmers can have the use of a sound horse at the price of an unsound one, it is clear that a great benefit will have been conferred upon breeders; and I forgot to mention before that in Ireland the stallions who won the Service Prizes at Ball's Bridge are to serve tenant farmers' mares at 1*l.* each, a fee at which no one could grumble. It would be well if the different bodies at present working in the interest of horse breeding could agree to set up some standard of soundness, and let the public know what it is. It would also be a step in the right direction if some arrangements could be made permitting the veterinary surgeons employed in making their examinations to have more time. Mr. Santy, a well-known veterinary surgeon of Norwich, was recently a witness in a horse case, in which the professional opinions differed greatly, and in connection with the examination of horses at shows, Mr. Santy, while a witness on oath, stated that in nearly every instance the veterinary examination was a farce, owing sometimes to the haste with which the inspection has to be conducted, and sometimes to the awkward corners in which the veterinary officials have to work. Subsequently he addressed an important letter on the subject to Mr. Euren, the Secretary of the Hackney Stud Book Society.

Whatever may be the reason, it is an undoubted fact that veterinary surgeons do differ from one another as to the existence or non-existence of some alleged unsoundness, while instances are on record of professional gentlemen disagreeing whether a certain defect does or does not amount to unsoundness. This difference of opinion is found not only in the witness box, but in the sale yard and show ring, and it is difficult to say in which place the nearest approach to infallibility is most to be desired; it is certain, however, that the attempts now being made to

give an impetus to horse breeding will not be as successful as they might otherwise be, unless exhibitors feel that they can send their horses with full confidence that they will not be rejected except in the event of an undoubted failing. Polardine and Scot Guard are among the number of those who have been first rejected and then passed sound; while at the Newcastle Spring Show at least one sire whom the veterinary officials declined to pass has got the best of stock, and has been as much sought after as any horse ranked as a hunting sire. An unjust decision, the mistake of stigmatising as unsound a horse as sound as the proverbial "bell of brass," may involve the owner in loss. His sire will not be used, and when he wants to sell he will be confronted with the former certificate of unsoundness; and although he may be passed by half-a-dozen other professors, some of the mud thrown is sure to stick, for the saying holds good equally in the case of horses as of men. There is nothing, perhaps, which is so calculated to prevent the schemes now on foot for encouraging horse breeding from coming to a successful issue than perfunctory veterinary examination, or a belief on the part of exhibitors that it is so. I saw some of the horses examined at the Newcastle Spring Show, and I can vouch for the fact that the examination there was by no means of a superficial kind, yet I believe I am right in saying that all parties were not satisfied. The name of one horse rejected has already been mentioned in print, so there can be no harm in mentioning it again. Mr. Winkle was one of the best-looking hunter sires in the show, and had he passed would for a certainty have taken one of the 200*l.* premiums. But he was cast. Now this sire has got a great deal of excellent stock in the north of England, and at shows the youngsters by him have done well; he is an established favourite in his district, has had a full number of mares during the last season, and, by way of proving the exception to the rule, his rejection at Newcastle does not appear to have done any very great harm to his reputation; in other words, the breeders who had previously secured his services do not appear to have set much store by the unfavourable decision of the veterinary officials.

It is far easier to ask how to remedy this state of things than to supply an answer to the question when asked. If men of eminence in their profession stake their reputation on their decisions arrived at under unfavourable conditions, they are, of course, not only acting in a manner detrimental to the interests

of those who exhibit horses, but they injure their own reputation. It seems hard to believe that they would knowingly do one or the other. Mr. Santy, however, has declared the majority of veterinary examinations to be a farce, and in this unsatisfactory state the matter must be left, in the hope that the executive of all shows will give the matter their most serious consideration, because a mistake is also prejudicial to the future success of hunter, hack, or harness horse.

No one will deny that the securing sound sires of suitable make and shape is the first step towards successful breeding. Many good judges, however, have demanded that they should have another qualification, viz., that they must have shown by their own performances on the turf that they are possessed of strength and stamina; obviously the more recommendations a horse has the better, but, possibly, the value of turf performances in hunter breeding may be over-rated; though, at the same time, as hunt steeplechases are now so much in vogue, and as it takes a smart horse to win one, good credentials from the turf, and especially over a country, may be of more importance than might otherwise be the case. And now, in taking leave for the present of sires, it seems to me that the various exhibitions have shown that there are in England plenty of sires good enough to get a hunter of the highest class provided certain other important requirements are not overlooked.

One of these, and by no means the least, is the selection of a suitable kind of mare. Breeding from an undersized, mis-shapen, worn-out mare, or one afflicted with unsoundness likely to be hereditary *must* result in failure, even though she were mated with "the horse of the century." If it is ever hoped to make breeding a profitable undertaking, the need of a proper mare is, in my humble opinion, greater than the necessity for a first-class sire. In other words, I believe that a better, and by a better I mean a more saleable, horse would be bred from a first-class mare with the aid of a moderate sire, than from a poor mare with the finest sire that ever was foaled; and in confirmation of this theory I may point to the time when horse breeding in Ireland was at its height, before political agitation stopped hunting and checked the native industry, which, on the part of its followers, was quite a labour of love. The Irishmen then bred from very much stouter mares than most English breeders use; but many of their sires would have suffered by comparison with those seen at Newcastle. In this category, however, must

not be ranked such sires as Bandy, The Regulator, Chit Chat, The Mite, or The Old Bird, all of whom were everything that could be desired. But Ireland's strength lay in her mares. The majority of the farmers bred from a clean-legged cart mare, more like a compact edition of the English "vanner," and not unlike the clean-legged Welsh mare, a class which has supplied the dam of many a good hunter. The Irish hunter was not as a rule what people call a bloodlike horse, that is to say, he did not look like a racehorse out of training. He had, however, good shoulders, a good middle, and powerful if sometimes drooping quarters; yet he had "quality," and, most vital contingent of all, he could generally carry 14 or 15 stone.

Here a digression may be permitted to express an opinion as to what is a saleable horse, and consequently the kind of horse likely to bring the most money. The best idea may be gained by going the round of the more important horse-shows in the summer, and by taking stock of the horses upon which men who mean going are mounted in the hunting season. In the first place those who win prizes, and the stamp selected by those to whom money is no object, are upstanding horses 15.3 at least, and if 16 hands so much the better; shoulders must be unexceptionable; hocks neither too straight nor too bent; and the hind legs must not stand away as though they were coming off; the horses must show breeding, and be, at least, up to 13 stone; if equal to 14 or 15 stone so much the better. The horse standing from 15 hands to 15.2, and up to 11 or 12 stone, is simply a drug in the market as a hunter. Cobbiness often denotes strength; but a cobby horse who gallops "round," and rolls like a herring-boat in a cross sea, will never be bought by a man who hopes to be handy to any pack of hounds in a grass country, or in any other for the matter of that. What with cast-offs from the racing stable, small horses of the polo pony stamp, and various breeding failures, the 12-stone man can mount himself at pretty well his own price, and light-weight hunters cannot pay for breeding.

If then it be an accepted truth that, even under favourable circumstances, nothing less than a 13 or 14 stone horse will indemnify his breeder against loss, no one will quarrel with the assertion that the majority of farmers who breed need to get fresh mares. That they will do this without some special inducement is improbable, and the question is in what form shall the inducement be held out to them? The answer probably is that

the inducement should be twofold. In the first place the ownership of a good mare should bring in something in the shape of prizes; and, secondly, a ready market must be found; but the question of market will be dealt with presently. With regard to the prizes for mares, it is submitted that at horse-shows the classes for hunter brood mares might well be confined to mares belonging to *bonâ fide* farmers who do not follow any other business, and further limitations might stipulate that the mare herself should be up to at least 13 stone in the saddle, and stand not less than about 15.2½. A prize of 20*l.* or 30*l.*, either in a lump sum, or spread over two or three years, would be of appreciable service to a farmer; it would of course be necessary to stipulate that the mare should be used for breeding purposes each year, and it might be wise to make it a condition that she be put to some approved sire, say for instance, to one who had taken prizes, been commended or reserved at shows, or in some other way was approved of by the donors of the prizes. One must not of course forget that all this question of encouragement is a matter of money, and that if every Agricultural Society had 1,000*l.* yearly to devote to horse breeding a good deal might be accomplished. But with finances in the state in which we find them, I think a step might be taken by revising the conditions of the brood mare, yearling, and two-year-old classes of shows, and confining them to farmers. There is a further difficulty with respect to mares. It stands to reason that, if a mare of any kind from the cart-horse to the thoroughbred be put to a thoroughbred sire, and her female progeny become, in their turn, the dams of hunters, the mares being again mated with a blood sire, the weight-carrying abilities of each generation will not increase, consequently the mares will from time to time be indebted to a strain of what may be called coarser blood. If then some class could be established at shows for mares like those from which the Irish farmer used to breed, it is submitted that great service might be rendered. A nice discrimination would have to be exercised, because the favouring of some breeds would only retard the process of hunter breeding. The worst piece of luck that ever befel the Irish breeder was the introduction into Ireland of the Clydesdale mare, to the partial exclusion of the stamp we have before referred to.

It is an indisputable fact that many of the breeding failures occur through breeding from worn-out mares. In one way farmers have it in their own power to breed from young mares

without incurring additional cost. A certain proportion of foals they may breed will be fillies; and if these were put to the horse when three years old—many experienced men say that you may begin at two years old—a farmer who wished to keep his young stock for an extra year might do so, taking the chance of the forthcoming foal living as the price of another year's keep. It used to be thought that the shape and stamina of a mare were injuriously affected by her having a foal. That idea is now pretty well exploded, as in some of the largest breeding establishments it is the custom to breed from two- and three-year olds. When the filly has bred one foal she may either be put into work with a view to selling her, or may be kept for stud purposes. The latter course would probably be the most remunerative, at any rate for another year, because first foals are apt to be small. By adopting this course, a farmer would not only increase his stock by nearly, if not quite, one-third, but he would in addition reap all the advantages to be derived from breeding from young instead of from old mares.

While wishing success to every existing scheme, it is possible that it may not be wise to put all our eggs into one basket, that is to say, the time may have arrived when it might be expedient to spend a little of the money now given to stallions in helping farmers to keep proper mares. Including the Government grant, between 6,000*l.* and 7,000*l.* is cut up into prizes for sires without reckoning the sums given at ordinary horse-shows, and it might be good policy to spare a portion of this sum for mares; because, unless the standard of them be improved, superior sires will effect but little; they will tend to the production of a greater proportion of sounder horses, perhaps, but they will not raise the standard in point of size and weight-carrying powers, which is what we really want.

In conclusion, a word or two on the subject of a ready market. When we have got the best sires, the best mares, and our saleable horse—if we ever do get him—he will be comparatively useless unless the farmer is able to turn over his money within a reasonable time. Some breeders may have unusual facilities and abilities for doing all three; but, as a general rule, breeding, breaking, and selling the made article form three persons' work; and very few men can compass all these ends. If the farmers in a district were to agree to hold periodical sales of their young stock at the age of two or three years, a long catalogue might be compiled; buyers, on finding that a large choice would be offered them,

would probably attend in fair numbers. Who, it may be asked, would buy two- or three-year olds? The reply is that the supply would create a greater demand. It was not the public who clamoured for Christmas cards at two shillings or half-a-crown apiece, or elaborate valentines at a guinea. The stationers produced them, and the public bought them. Why should it not be the same with horses? As a matter of fact, there are now men who say it pays them better to buy three-year olds than to breed. Let us trace this imaginary scheme a little further. The buyer of two- or three-year olds would probably be a man who was a horseman rather than a farmer, and he would devote himself to teaching the youngster to ride, to jump, and to giving him manners. How long the buyer kept him would depend upon circumstances. If he were a dealer he might keep him till of an age to pass him on to the hunting stable; but if schooling were his *forte* he might only keep him till he was a four-year old, at which age he might pass him on to a dealer, or some one willing to buy a promising hunter. This is a view of what might possibly take place if farmers take kindly to breeding in the future, and some means be found to secure a market. If what is above suggested ever does come to pass, all parties would be suited, and, bearing in mind that a horse does not come to maturity so quickly as a sheep or a pig, each of the persons through whose hands the youngster would pass could turn their money over with reasonable quickness. The colt sold at two or three years old would not have cost the farmer a great deal, and could, therefore, if the farmer did not set a false estimate upon him, be sold at a moderate figure; while, as he would have none of the risks incidental to teaching horses to jump out in the field —if he were wise he would not wholly neglect the leaping-bar— his chance of making a loss by accident would be manifestly less than if he kept his colt, and tried to make him a hunter himself. Then the dealer in two- or three-year olds would not have to encounter any of the risks which attend breeding. He would of course, provide himself with the proper conveniences and appliances for achieving the end he proposes to accomplish, and having kept the pupil for as long as he thought fit would proceed to dispose of him. The next buyer would take a properly trained young horse fit for use in every respect except age, for four-year olds cannot perform the work of aged horses.

Whether this be a too Utopian theory I must leave to others to determine. If some practice like that sketched above could

obtain there is every reason for believing that breeding would receive a fillip. There would be an opening for specialists. It stands to reason that breeding a colt, and selling him half trained, half broken, and with an imperfect knowledge of what is required of him in the hunting field, can scarcely be otherwise than a losing speculation. The purchaser must take nearly the whole of the risk of breaking and schooling. Divide the risks incidental to breeding and schooling, and I fancy many more persons than at present would be willing to go in for breeding.

With respect to the army horses, it has been pointed out by several writers that it will never pay to make the breeding of cavalry horses the aim of one's life. Of course not; but a horse which may be worth every shilling of the money the Government buyers may give may, at the same time, not give promise of developing into a high-class hunter, snd it is something to have a ready market for these *quasi* failures. Horse-shows have tended to raise the price of first-rate animals. There are few men who could afford to mount themselves on "champion" hunters. How many "carriage people" could or would afford to sit behind a pair of those steppers of which Mr. John Robinson, of Hull, seems to have a never-ending supply; and in how many buggies or dog-carts do you see the equals of Movement or Magpie? Once in a lifetime, perhaps, a man may breed a horse deemed good enough for the show-yard, and when his turn comes he can obtain a price which would seldom or never be forthcoming from a man who wanted a horse to use in the field or on the road. Now that there are classes for all ages, from foals upwards, there is the chance of selling an exceptionally good youngster on advantageous terms. Nevertheless, for the generality of horses it is important that a sufficient number be found in the same place for sale to tempt intending buyers to come from a distance.

To what extent the scheme of buying army remounts direct from the breeder will benefit him depends in a great measure upon the orders given to the buyers by the authorities. If the Government agents are to be ready at all times to buy as many suitable horses as they can find at this regulation price, success may be hoped for. Visions may, perhaps, arise of the army being over-horsed if this plan were carried out. Possibly, however, there is little danger of anything of the kind. The breeder would not submit to the army officials a horse he deemed likely to make more of; while of those offered for inspection

only a portion would be accepted, and it is in the highest degree improbable that were ten times the present number of horses bred, the Government agents would find themselves overstocked. It has been contended that no farmer would sell at the Government remount price. That of course depends upon what the price will be under the new scheme. If it remains at the old figure, I see no reason why the army buyers should not pick up some horses, as the middlemen used to get them at a low figure and pocket the balance. Between the sum expended and that allowed by the army of course all fanciful requirements should be given up, and the buyers should demand no more trial or guarantee than would be given to a private person. I have seen too much of breeding and selling to believe for one moment that the means of making a fortune has been discovered; but I do mean to say that under a changed system, with the keeping of superior mares encouraged, and with the establishment of a ready market, it might be worth while to see whether horse-breeding judiciously carried out could be of some benefit to the agriculturist, after making proper allowance for barren mares, accident, and disease. Beyond the selection of sire and dam, success or the want of it must largely depend upon the breeder's management of his mare and young stock; but this would be beyond the scope of these remarks. Whether young or well-bred mares and colts can be successfully worked on a farm is a question that can only be determined by individual experiment; one will succeed where his neighbour will fail.

W. Blew, M.A.

IMPERIAL OCEAN PENNY POSTAGE.

At present the most remarkable fact in connection with the movement for the institution of "Imperial Ocean Penny Postage" is the rapid growth of public opinion in its favour. This movement is rather more than eighteen months old. When the idea was first mooted by Mr. Henniker-Heaton, M.P., it was pooh-poohed by the clubs, and ignored or ridiculed by the bulk of the Press, just as steam, gas, home penny postage, and in our own time electricity, were pooh-poohed and frowned upon by those respected institutions. Now every newspaper with any reputation to lose has pronounced finally and strongly in its favour, every well-informed man is familiar with at least its general outline, a hundred Members of Parliament have formed themselves into a Committee to promote it, Lord Rosebery, canniest and gayest of statesmen, has expressed a firm belief in its speedy success, and keen-witted political strategists are considering the question of utilising it for party purposes.

The movement was initiated by Mr. Heaton, as already stated, but he does not it is understood claim to be the originator of the scheme. The idea of extending the benefits of written intercourse, by taking off that surplus portion of the charges for conveyance which checks the growth of correspondence and revenue together, was conceived by Rowland Hill. He demonstrated and realised his idea for the Three Kingdoms, in the teeth of bitter opposition and dismal forebodings of the "spread of sedition through the post." What he did on land Elihu Burritt proposed to do, and Mr. Heaton it seems likely will do, by sea. The argument is a simple one. The lowering of postal charges to remunerative rates doubled the volume of home correspondence in twelve months, and has since raised it to sixteen times its pristine bulk. Why should not the same principle be applied with proportionate success to foreign correspondence? No account is here taken of the universal, silent, potent influence for mental and material good and happiness which results from bringing the millions of our countrymen and countrywomen scattered over every quarter of the globe into close and constant communion. The question is, whether the correspondence between Englishmen abroad and Englishmen at home would not be stimulated by a low rate, just as that between Englishmen in different counties was in 1841. An economical principle if

true in the temperate zone does not become false in the tropics under similar conditions, any more than a mathematical or theological principle. Human nature remains very much the same as before, even after a few weeks on board of a steamer. The son will desire to write home, and the man of business to give instructions, make inquiries, and receive reports as frequently as the Postmaster-General will permit them. Latitude and longitude have nothing to do with the matter.

The chief objection raised to the scheme of carrying a letter from England to the Colonies, or *vice versâ*, for a penny, is that it would not pay. This objection has been shown to be untenable. At present the postal revenue is growing at the rate of more than 120,000*l.* per annum. Mr. Heaton's proposal is to leave to the Post Office its present annual profit of 3,000,000*l.*, and to employ the amount realised beyond that sum in cheapening and extending postal intercourse. He does not anticipate that the sacred fringe of the increased surplus would be touched. As will hereafter be shown, the total possible loss on his scheme would be under 20,000*l.* a-year, and instead of loss, a huge surplus would inevitably result from its adoption. But it may be said that this conceivable loss of 20,000*l.* a-year should not be provided against from the increase of 120,000*l.* annually in the surplus, since the general body of taxpayers would benefit by a reduction of taxation to the amount set apart to guarantee Mr. Heaton's scheme against failure—20,000*l.* This is doubtful, and the benefit referred to would probably be cheaper strong drink and tobacco. But the argument overlooks the fact that the classes which would feel most gratefully a lowering of taxation are precisely those which would chiefly benefit by a reduction in ocean postage rates—the struggling mercantile community fighting the subsidised foreigner with his bounties and low postage rates in every market of our Colonies and of Europe, and the millions of the middle and lower classes who have relatives, emigrants, residing beyond the seas. This matter deserves further examination; but at present it will suffice to say that a sum of 20,000*l.* only is involved in the prosecution of this momentous reform, and it is not impossible that Mr. Heaton and a few friends may guarantee the Chancellor of the Exchequer against even this peril.

In March, 1886, Mr. Heaton moved in the House of Commons the following resolution:—"That in the opinion of this House, the time has arrived for the Government of this country to open

negotiations with other Governments with a view to the establishment of a universal international penny postage system." This motion was undoubtedly in advance of both public opinion and Parliamentary opinion. That the institution of a penny postal rate between Great Britain and the British Colonies must lead to universal penny postage is obvious, for the British service will compete with foreign services at all points of the globe. A tactical error was, however, committed in prescribing for the timid senatorial body a larger dose of reform than was essential in the circumstances. The wider scheme is still cherished, but the wise course has been taken of calling for an inquiry into the question whether it would not be feasible and remunerative to establish a purely British or "Imperial" ocean post. This demand marks the present stage of the movement, and it can hardly fail to be granted. For it commits no one to any particular view, and many of those who press it are politicians of proved sagacity and financial repute.

It has been established in the course of this controversy (*a*) that correspondence can be carried by a swift steamer to the Antipodes at the rate of one farthing per letter, with a fair profit to the carrier; (*b*) that at the proposed rate of one penny per letter the Post Office would derive a clear profit of 348*l.* per ton; (*c*) that the Post Office now extracts from the public 1,792*l.* per ton for Australian correspondence. It has been objected that the postal reformers wish to treat a ton of letters as a ton of ordinary goods (which of course require but ordinary care in transmission), but this is a mistake. The rate of transport for the most valuable goods is about 2*l.* per ton to Australia, whereas under the above proposal the sum of 448*l.* per ton produced by a penny rate would be thus divided:—100*l.* per ton would be paid to the steamship company for conveying the correspondence, while 348*l.* would be retained as profit by the Post Office. Thus the steamship owner would receive fifty times as much for letters as for valuable goods, instead of as at present nearly a thousand times as much. The reader will perhaps be puzzled to understand how it is that such excessive remuneration is allotted, and the explanation of this matter involves the question of *subsidies*.

No less than 725,000*l.* is paid annually to the great steamship companies for the conveyance of mails to and from the United Kingdom, and this sum is raised mainly by increasing the postal charges for the conveyance of letters other than those

exchanged between residents in the United Kingdom. The history of these subsidies is shortly this. During the last half century it has been necessary to encourage the establishment of a regular service of "liners" between the home country and the infant Colonies whose commerce would have been insufficient to pay for such a service. In such a case a "subsidy" has been granted, nominally for the conveyance of mails, really for the fostering and stimulating of trade. How vital this Colonial trade has become to us will shortly be shown, and there can be no question that the granting of subsidies was a wise, provident, and necessary policy. The first question is, who should find the money? Here another consideration presents itself. In case of war with a maritime Power it is admitted that we shall need numerous swift steam cruisers for the protection of the countless fleets of slow British merchantmen that cover the seas, and for the transportation of troops and stores to the various vulnerable points of Her Majesty's dominions. Such cruisers would cost a colossal sum to maintain in connection with the navy. But by subsidising the great "liner" companies these cruisers are kept always ready in working order, and available in case of need. Thus in the campaign of 1882 several of the majestic P. and O. steamers moved down the Suez Canal to Ismailia, there to disembark horse, foot, and artillery, stores, railway plant, and so forth, for the subjugation of Arabi. It is obvious, therefore, that subsidies must be paid to an extent sufficient for ensuring an efficient service. But who should pay them? Clearly the nation as a whole (including colonists), not the small class which corresponds with the Colonies. For the nation as a whole benefits from the augmentation of trade with the Colonies. It is notorious that the trade of our home merchants with foreign countries is steadily diminishing, while that with our Colonies is increasing in a still higher ratio. A large proportion of our operatives is engaged all the year round in executing orders for goods intended for the colonial market, and the money earned by these operatives of course circulates in this country and benefits other classes. The policy of charging these subsidies on the class which is compelled to correspond with the Colonies is indefensible at every point. That class may be subdivided into the mercantile and the emigrant (including emigrants' relatives in this country) classes. Let us consider the case of the mercantile class.

It is well known that the difficulty is not in keeping, but in

finding a market. Enterprise is all very well, but the merchant who would open up relations with a new class of customers, differing often widely in habits, tastes, climatic and social conditions from Englishmen, must be furnished with minute information of the latest date upon a variety of details, or he runs the risk of making a fatal mistake. So well is this recognised by the statesmen of France and Germany, that the Governments of those countries pay huge subsidies to steamer lines running from such ports as Bremen, Havre, and Marseilles to British Colonies for the express purpose of helping their own countrymen to compete with the British merchants. They do not, however, like the British Post Office, charge the expense upon the unfortunate merchant; it is defrayed out of the general national revenue. It is little short of scandalous that the German and French and other Continental Post Offices charge almost invariably half the British postal rates for the conveyance of correspondence to distant portions of the earth's surface. The result is that the British merchant, being heavily handicapped, gradually drops the expensive habit of corresponding as far as possible. He pays a tax upon his efforts to develope the national trade, from which tax his foreign rivals are free. But the absurdity is even greater than is here apparent. Great Britain, like the rest of the European States, is a member of the Postal Union, and conveys the letters of foreign writers, by *British* mail steamers, for about half the rate which British writers have to pay. The excuse given is that under the Postal Union Convention our Government is bound to convey foreigners' letters at the half-rate, but that it is under no obligation whatever to consider our own countrymen. Consequently, the British merchant is actually paying a kind of bounty to his foreign rival on the efforts made by the latter to oust him from British colonial markets. This system of hampering, shackling, and stifling the delicate initial operations of infant commerce is that of the snake coiling about the baby Hercules; may it meet speedily with the snake's fate! What would the Postmaster-General say if he heard of a farmer who used up his seed-corn in feasting his neighbours?

It is even more monstrous to tax the emigrants and their friends than to tax the merchant. In the first place they are almost without exception members of the most impoverished class of the community, in which the sum paid for an Australian letter, sixpence, represents the sovereign or the five-pound note of

the middle and upper classes. How the imposition of a heavy and unnecessary postage rate on this humble class for the purposes of maintaining cruisers and of fostering the national trade can be defended it is hard to conceive. The evils entailed are grave and lamentable. All intercourse between the emigrant and his friends is discouraged, and the first economy practised by the stalwart settler in Canada or Australia is usually effected by casting off the ties of sympathy and affection that might have bound him for life to his Fatherland. At a time when envious glances are cast from various Foreign Offices along the fair extent of our Colonial possessions, when an American-Canadian union is advocated, when Russia is sidling towards India, France towards Egypt, and Germany towards Australia and South Africa, and when the magnificent array of the Anglo-Saxon race in one vast confederation girdling the globe has dawned upon the horizon of the future, at such a time surely it is unworthy of British statesmanship to do or perpetuate aught which may tend to sever the ties that unite Briton to Briton all the world over. In most cases, moreover, this heavy postage rate causes a large diminution of innocent happiness. It is hard enough that the emigrant is parted—usually for life—from his parents and friends. He goes forth sturdy, fearless, enduring, hewing his way through jungle and forest, ploughing, building, toiling, from morning till evening, the pioneer of civilisation, bearing the national flag, and winning renown for the national character. He faces toil and exile without a murmur, he utters no complaint, he makes no request. But if you questioned the rough shaggy wanderer closely you would find that he experiences unspeakable happiness on the receipt of a letter from "home," as the poor fellow persists in calling a place which he is never more to see. How cruel to deprive him, aye, and his relatives at home, of this one "ewe lamb" of bliss! But the Post Office is a monopoly, and it is the nature of a monopoly to become oppressive.

It is here necessary to show that the amount of the subsidies paid is very much in excess of what is required. It has already been stated that letters can be carried at the rate of one penny each to the Antipodes, yielding a profit of 100*l.* to the carrier, and of 348*l.* to the Post Office. A practical demonstration of this calculation was afforded by the offer of a great steamship company to carry Australian correspondence for one penny per letter. This offer was brought by Mr. Heaton before the Post-

master-General, and of course rejected. For that high official, even if disposed (as the present occupant of the office is said to be) to favour liberal reforms, is powerless in the matter. He finds over 3,000,000*l.* a-year for the Chancellor of the Exchequer, and is expected to increase that surplus as far and fast as may be. He is in very much the same position as is occupied by a mild and just Turkish Vali. The worthy Pasha is bound to furnish the central authorities with so much sheep-tax and tithe-charge every year, and though his heart may bleed at the spectacle of the wholesale fleecing of the peasantry he dare not spare them. So that year after year the taxation on the emigrant class, and on the trade that feeds our workers is increasing at the rate of 120,000*l.* per annum—that being the annual increase of the Post Office surplus—while it has been practically demonstrated that one-sixth of the present charge would be remunerative. As Australasia is the farthest point to which letters can be carried, it follows that the postage in all cases might be reduced by at least five-sixths. As a matter of fact, Germany now carries letters to Australia for 2½*d.* More than this, the German Government has actually offered to carry British letters to British Colonies at the low German rates!

Some of the countless anomalies existing in our postal system are startling. Thus, the "Postal Guide" contains a list of thirty-one distant Colonies or semi-civilised countries to which the British postage rate is just double the French and German rate, although the correspondence from France and Germany is in many instances conveyed in British mail-steamers. Again, a British mail-steamer carries the British letters to Australia at 6*d.* per missive. It then steams on for five days to New Caledonia, and there delivers letters posted by Frenchmen at a charge of only *fourpence* each. Once more, Messrs. Peek, Frean & Co. lately sent 2 tons' weight of samples through the Belgian Post Office to their customers in the United Kingdom at the rate of 1*d.* for each sample of 3 oz. weight. The British Post Office delivered the whole, the Belgian pocketing the postage. The firm adopted this course because their samples, if posted in the United Kingdom, would have cost them *twopence* each for postage. A very large sum is thus lost every year by the British system of overcharging. Meanwhile, the foreign Post Office officials pocket the proceeds, with the comfortable reflection *Optimum frui alienâ insaniâ.*

It is now time to explain Mr. Heaton's experimental scheme,

which he has formally laid before the Chancellor of the Exchequer. It appears from various returns that after deducting the earnings of the packet service from the expenditure upon it there is a loss of rather more than 40,000*l.* On some of the branches of it, *e.g.*, those to Ireland and the United States, there is a profit; on others there is a loss. The case of the longest distance is taken, namely, that to Australasia. Of the letters sent by this expensive route (overland to Brindisi, thence by sea), it is fair to assume that one-half (*a*) will be commercial, with regard to which the utmost attainable speed is desirable. Of course commercial correspondence of an urgent and important character is conducted by telegraph; but it may be conceded that commercial letters generally should be delivered as quickly as possible. The remaining class of letters (*b*) will include those exchanged between members of the emigrant class, family and friendly correspondence generally, and the less important commercial communications. It is not proposed to interfere with class (*a*); and anyone willing to pay 6*d.* will still be able to send a letter by the Brindisi route. Nor is it proposed to alter the rate for newspapers, &c. As to class (*b*), however, the proposal is to re-establish the former service by fast steamers carrying the mails all the way by sea from this country to Australasia, at the reduced rate of 1*d.* per letter. If not a single additional letter be sent after the lowering of the rate the loss would be rather under 20,000*l.* How is this deficit to be made up? Obviously by the natural increase of correspondence. If each of the British-born inhabitants of Australia received a letter twice a-year from his or her relatives in the three Kingdoms the deficit would be covered, and a large class relieved of a burdensome impost. Is this estimate considered sanguine? If so let us remember the effect of instituting the penny rate in this country. In the year 1839 there were delivered in the United Kingdom under 82½ million letters. In the year 1840, after the creation of the penny post, the number sprang to 169,000,000, and there were delivered in 1885 more than 1,360 millions, or sixteen times as many as in 1839. But per head the inhabitants of Australia exchange among themselves a much larger number of letters than is exchanged among residents in the United Kingdom. Moreover, the Australian population is rapidly multiplying, education is becoming general, and a thousand influences are at work to stimulate the natural communicativeness of the race. The volume of correspondence

carried between the British and Australian shores within the twelvemonths after the institution of the cheap rate would probably astound the most optimistic of the reformers themselves. But however great its bulk it would appear insignificant in the capacious holds of the splendid liners that are running on this service. One great company has already offered to carry six times the present weight of mails at the same charge.

To some minds the sacrifice of the smallest degree of speed may appear a serious fault of this plan. It should be remembered, however, that these great ships now frequently cover the distance in less time than is allowed by the expensive Brindisi route, and that at the worst the delay would be almost inappreciable, while no one would be compelled to submit to it.

We may be allowed here to express a hope that in any case the Colonial postal authorities will make strenuous efforts to attain the high standard of efficiency which distinguishes the home service. The public is entitled to have correspondence carried with safety, speed, and regularity, and these qualities are not at present characteristics of certain Colonial services. Recently several instances have occurred of the loss of letters entrusted to Colonial Post Offices, and no explanation has been forthcoming. This state of things is discreditable.

The above is a sketch of the chief features of a simple but far-reaching reform, which has every prospect of success, and which may have vast influence in perpetuating and intensifying that feeling of brotherhood between the Colonists and the "home-keeping folk," which may one day prove the salvation of the Empire. The noble conception of communication "as easy as speech, as free as air," between the widely-parted races of the globe is worthy of the land which produced Stephenson, Wheaton, and Rowland Hill, and we heartily wish success to the energetic and enthusiastic reformers who are labouring to attain it.

FOREIGN COLONIES AND DEPENDENCIES.

THE splendid display of the resources of our Colonies at the Colonial and Indian Exhibition of 1886, and the interest excited, far and wide, by that highly successful and patriotic undertaking, have undoubtedly led Englishmen to think more profoundly of the value and latent resources of these outlying portions of their vast commonwealth; and the attention thus bestowed on our own possessions has naturally caused an increasing amount of interest to be taken in all that concerns the colonies and dependencies of other nations.

Not much public attention had previously been given to this important subject, but the activity recently displayed by certain of the Continental Powers in Africa, Oceania, and the Indian Ocean, coupled with the foundation of the Imperial Institute at home, has awakened an interest in the whole question of colonial enterprise. For whatever concerns the opening up of distant lands in order to provide fitting homes for the teeming populations of European States and new outlets for the overstocked markets of the Old World, must be a subject of the profoundest interest to all thoughtful men.

It is proposed in the following article to give a slight sketch of the Colonies and Dependencies of other Powers, and of their respective relations to the interest, both political and commercial, of this country. But it will be readily understood that in a digest such as this, it is only possible to touch the mere fringe of a narrative which has, at the present time, an interest so absorbing, and which bears on international questions fraught with such momentous issues for the future.

FRANCE.

Although France at one time bade fair to rival in her acquisitions the vast possessions of the Spaniards and Portuguese, it is undeniable that that great country has not sustained the early promise of her colonial enterprise. Down to the middle of the last century the French held Canada, their influence was supreme in the East Indies, and in many districts of Africa and America their possessions were at least as important as those of the English. Our Gallic neighbours may at any rate claim to have been as energetic as ourselves in endeavouring to found, and in actually

planting colonial germs, and if success has not in every case crowned their efforts, failure has not been due to lack of zeal in the colonists themselves or of energetic and hearty support from their various Governments—whether Royalist, Imperialist, or Republican. It is these very qualities which have perhaps been the bane of French colonisation, for in her over-anxiety to secure benefits which experience has taught us only come after years of patient waiting, France has too often excited the mistrust and ill-will of contiguous native States as well as of European Powers.

French colonisation is of much earlier date than is generally supposed in this country, dating back as it does to the reign of Charles V (the Wise), and anterior, therefore, to the famous voyages of the Iberian and Netherlandish navigators. In the year 1364, certain hardy adventurers of Normandy, leaving their native port of Dieppe in two small vessels, succeeded in reaching the West African Coast, and passing onwards to Rio Sestro, established a trade with the natives in gold, ivory, and pepper, laden with which products they came home. In the following year they set out on another voyage, being joined on this occasion by some comrades from Rouen. The success of this expedition was as great as that of the former, so much so that other ventures quickly followed, and by the year 1382 a regular trade seems to have grown up between the Norman ports and the West Coast of Africa.

The long wars with England seemed to have subsequently interrupted the development of this trade, and early in the fifteenth century France had abandoned the stations formed by her enterprising sons, and when some years later she attempted to regain them it was found that she had been forestalled by the Portuguese, who, under the authority of a bull of Pope Eugenius IV, were now vigorously taking possession of whatever new lands came within their reach. In 1488, however, Captain Cousin succeeded in renewing relations with the natives, and laid the foundation of the present colony of Senegal.

In the following century, France, much to her chagrin, was left out of the famous bull of Pope Alexander VI, which, following the lines of its predecessor, practically left to the Spaniards and Portuguese full liberty to take possession of any newly-discovered countries. Not to be daunted, however, France devoted her energies to the more sterile regions of the north ignored by her luckier rivals, and on the desolate coasts of Newfoundland

and Cape Breton her seamen inaugurated those important fishery industries, the regulation of which has frequently presented a knotty problem to both French and English jurists and statesmen.

Passing now to the seventeenth century we find France actively engaged in Canada, the West Indies, Madagascar, and other places, and fast hastening to the zenith of her fame as a colonial Power, which was reached when the eighteenth century dawned. "At the beginning of this century," says M. Duval in his valuable work on French Colonies, "France was the first of colonial Powers. Mistress in America of the northern territory and the entire basin of the Mississippi, she effaced the English settled in New England and Virginia, and counterbalanced Spain and her sovereignty of Mexico and the vast countries of South America. On the Gulf of Mexico her possessions exceeded in number and wealth those of Spain, England, and Holland." But from this proud position she was destined soon to be removed. The loss of Canada to General Wolfe, and Lord Clive's exploits in India, transferred the pre-eminence to this country—a pre-eminence which England has never since ceased to maintain, even if she has not always made such use of her opportunities as the more ardent school of her politicians would prescribe for her.

In the present century France has occupied Algeria and many situations of more or less importance, and is evidently quite alive to the advantages as well as the responsibilities attending Colonial possession. And it may be assumed that now that France has subordinated in her colonial rule the military element to the civil—as in Algeria—a marked advance is probable in her success as a colonising power.

It may now be useful to notice, as briefly as possible, the various French Colonies and Dependencies.

Senegal.—This is the oldest of the French Colonies. Its settlement is a direct outcome of the early French discoveries, and has been of very gradual development. Fostered by the genius of Richelieu and Colbert it became, towards the end of the seventeenth century, the principal seat of the French slave trade, and along with this horrible traffic other and less nefarious merchandise found its way to France and America. During the long Anglo-French wars of the eighteenth century we find Senegal captured in 1759 by Admiral Keppel, and after being restored at the end of the Seven Years' War, was again taken in

1778, and finally given up to France under the Treaty of Versailles.

The present limits of the Colony are not very clearly defined on the north and east; but the English settlement of the Gambia forms a good boundary to the south, and the Atlantic washes the whole of its western shore. The coast is of the usual African type—arid and sterile, and it is from the highlands of the interior, towards the east especially, that the French draw the richer products of the territory, such as gold dust, ivory, skins, palm oil, gum, feathers, seed, &c. These are bartered for iron and cotton goods, cutlery, firearms, and various intoxicants and stimulants. The population according to the last census was 191,608, and there is a considerable excess of females. The principal towns are St. Louis (the capital), Goree, and Rufisque. The French are carrying out a vigorous policy of public works and improving the communications between the coast and the interior.

The Gaboon, which is situated much lower down the coast between lat. 2° 30′ N., and 0° 5′ S., is another French Colony in Africa, being occupied in 1842 as a coaling station, since which period, however, France has gradually been extending its territories inland. The exact limits cannot be given as no accurate boundaries have been determined on. The climate is very unhealthy, and life for Europeans is almost insufferable; consequently it is unlikely that the Gaboon will ever become a colony of any great importance. Gaboon is attached administratively to Senegal, as are also the trading stations of Grand Bassam, Dabon, and Assinie.

Réunion.—Réunion, which has been successively known by the names of Mascarenhas, Bourbon, and Réunion, is an island of volcanic origin in the Indian Ocean to the south-west of Mauritius. Its physical features are very singular. The island, which is elliptical in shape, is divided from north to south by a chain of mountains, the two divisions being strangely dissimilar in respect to climate and natural productions. The eastern half is subject to tremendous hurricanes, and the whole island is exceedingly mountainous.

Réunion was discovered by Mascarenhas in 1545, but was not occupied by France until 1638. During the long Anglo-French wars privateers made desperate havoc with the English merchantmen, so much so that in 1810 the capture of the island was decided on and accomplished without much difficulty. Réunion

remained under the rule of England till 1815, when it was restored to France under the Treaty of Paris, England retaining Mauritius as a counterpoise. The principal product of the island is sugar; the plantations being worked by coolies, who form a little more than a third of the total population of 172,084.

The islands of Nossi Bé, Ste. Marie de Madagascar, and Mayotte also belong to France; indeed that country is energetically prosecuting a disputed claim to the large island of Madagascar itself, which by a Treaty dated December, 1885, is virtually placed under French protection. This claim is made under what is considered by many jurists to be a strained interpretation of a certain clause of the Treaty of Paris, and is based also on certain treaties with the sovereigns of the island.

East Indian Possessions.—Pondicherry, the principal vestige of the once supreme influence of the French in the East Indies, lies on a sandy plain some 112 miles in extent on the Coromandel coast, 86 miles south-south-west of Madras.

It came into French hands by purchase from the Sultan of Bejapur in 1674, and is one of the series of "factories" founded about that period by the celebrated François Martin. Its occupation, however, has been by no means an uninterrupted one. During the wars of last century it was several times taken by the English and Netherlanders—Sir Eyre Coote having captured it in 1761, Munro and Vernon in 1778, and Braithwaite and Cornwallis in 1793. After this last-named surrender it continued in English hands for upwards of twenty years with the exception of a short period in 1802–3, when it was given back to France under the Treaty of Amiens, and was finally ceded to France, together with some minor possessions, under the Treaty of Paris. The policy of this cession was subjected to severe criticism in this country at the date of the Treaty, and must indeed be considered, from the broad stand-point of the rights of nations, to be as illogical as inexpedient. The principal products of the territory are indigo, cotton, skins, and oils. Other French possessions are the settlements of Mahé on the Malabar Coast, acquired in 1827, Chandernagar, in Bengal, ceded by Aurungzeb in 1688; Karikal, on the Malabar Coast, bought from the King of Tagore in 1739, and Yanaon (Orissa) acquired in 1752.

Further India.—The possessions of France in Further India, comprising Cochin China, Annam and Tonking, with a protectorate over the Kingdom of Cambodia, are of very great im-

portance and of high political interest not only to France but to this country. The acquisition of this territory has been of recent date. It is impossible with the limited space at our disposal to enter into the circumstances of its annexation and development.

Oceania.—France holds in the South Pacific three groups, the Society Islands, the Marquesas, and New Caledonia.

The Society Islands were annexed in 1842, but owing to the opposition incurred, France was compelled to withdraw her claim to sovereignty, a protectorate being substituted which continued down to 1880, when France again assumed the reins of power.

The Marquesas Islands are a group of eleven islands lying some ten degrees south of the equator, over which France also rules, and the Archipelagos of Tuamatu and Tabuai, to the south-west, have also been annexed with them, as well as several other islands of no political importance.

New Caledonia, notorious as the French convict settlement, is to the S.W. of the New Hebrides and N.E. of New Zealand, in lat. 20—22° 30′ S., and long. 164—167° E.

West Indies.—The history of the French connection with the West Indies would be an account of bitterly-fought battles, annexations, and re-annexations, gallant captures and stubborn resistance, ending with the Treaty of Paris, which gave up to France Martinique and Guadeloupe, with some small dependent islands, which are now all the West Indies that remain to that country. France has since, however, acquired by purchase the island of St. Bartholomew, from Sweden.

French Guiana, lying between lat. 2° and 6°, and long. 51° 30′ and 54° 30′ W., is still in French possession, although it cannot be said to have succeeded as a colony, indeed it is generally cited by international critics as an instance of the want of success which almost invariably attends French efforts at colonization. This may be owing to its pestilential climate.

St. Pierre and Miquelon.—These are two small islands off the coast of Newfoundland held by France for the protection of her fishing industries.

Obokh.—This is a small town with some contiguous territory in the Gulf of Aden, situated to the north of Somali and about 130 miles from Aden itself. Its occupation, which dates from 1856, was intended as a counteracting movement to the English occupation of Aden. It has a fine natural harbour, strongly fortified, and is a good coaling-station and rendezvous for the French fleet.

GERMANY.

Unlike her great rival, Germany has hardly any colonial possessions, the settlements of Angra-Pequenha and the Cameroons recently annexed by the empire, a portion of New Guinea, and the Marshall Islands complete the list of German Colonies. At the present time, however, there is a claim on behalf of Germany to certain lands adjoining the territories of the Sultan of Zanzibar, which is in course of settlement.

But it would nevertheless be a very incorrect view to take, internationally, of the colonial question if we imagined that German influence were confined to the outlandish settlements just cited. Leaving out of consideration the large and constant emigration to the United Kingdom and other European countries, we may observe with Sir Rawson Rawson, that "Germany has long been in one sense a great colonising Power. Emigrants from the Palatinates were among the earliest settlers in the United States. Since the year 1820 she has sent forth more than three millions and a half of her people to the United States alone, being two-thirds of the number from the United Kingdom during the same period; and in the three years, 1881-83, their number was 655,800, an average of 218,600 a-year, exceeding the emigration from the United Kingdom in the same years by nearly one-third; and the number of German emigrants and their families residing in foreign countries, including those adjoining the Fatherland, viz., Hungary, Galicia, and Russia, amounts at the present time to at least 10½ millions, including 4½ millions enumerated in the last census of the United States, who had either a German father or a German mother. It should therefore scarcely be a matter for surprise, or exception, if Germany should desire to possess colonial territory, to which her emigrant population may resort, retaining them under her influence, and profiting by their industry and commerce, and by the extension of the national dominion, instead of witnessing their continual absorption in the territory of other countries, with which possibly she may have no sympathies. It must also be borne in mind that Germany has acquired a fresh interest in the advancement of her mercantile marine since the consolidation of the empire; and that the necessities of her present political condition oblige her to maintain a powerful naval force, which is available for the protection of any newly-acquired colonial territories, and will find a suitable employment in times of peace in visiting and extending them."

Whatever may be the future of Germany, however, as a Colonial Power, she is at present very strikingly deficient in the possession of lands under her own Government suitable as outlets for her teeming population, and it may well be doubted, so rapid has been the absorption of all lands available for settlement by Europeans, whether the vigorous efforts of her statesmen in this direction will have any very marked success. An interesting problem will be solved when the Germans have shown whether they can be as admirable as colonists under their own flag as they undoubtedly are in the Colonies of Foreign States.

Spain.

The colonising spirit of Spain dates from the world-famed discoveries of Columbus. The history of her conquests, her treatment of the colonies she founded, her extermination of the aborigines (a notoriety not confined to Spain), the enormous wealth and rapid growth of her plantations, and the story of the successful revolt of the major portion of her daughter-lands, are facts too well known to need any lengthy recapitulation in a short notice such as this.

If the cruelties of her early generals were severe, it must be admitted that her retribution has been heavy, and we may at any rate, under her present rulers, indulge the hope of better things for the few colonies remaining to her.

Cuba, the most important of these, was discovered by Columbus in 1493, on his first voyage, and has remained in the possession of Spain ever since, with the exception of a short period in 1762–3, when it was captured and held by the English. The hold of Spain upon the colony was seriously threatened in 1850 and 1851 by some filibusterers from the United States, and a very serious rebellion against Spanish rule took place in 1868. This rebellion lasted for some years, and fully taxed the energies and resources of the mother country, but was ultimately quelled after much bloodshed.

Since peace has been restored the commercial prosperity of Cuba has somewhat increased, and with the attention and interest —one might almost say affection—lavished on Cuba by the Spanish nation, there would seem to be a future before the island. A great drawback to prosperity is the hostility between the natives and their rulers, while foreigners are practically excluded from the island, owing to civil and religious disabilities, the Roman Catholic religion alone being tolerated. Of the natural

resources of the island there can be no two opinions, but when we remember the terrible havoc wrought among West Indian productions by the economical policy now in favour, it would be premature to take a very sanguine view of the development of the sugar industry, which is the principal one.

Cuba is rich in minerals, especially copper, and has extensive forests of valuable timber, while other West Indian products, such as maize, yams, coffee, cotton, and cocoa are under cultivation, and cattle are reared on the prairies. Only a small portion of the country is at present cultivated. The fauna of Cuba is rich and varied, with the exception of the mammalia, of which only one indigenous species, the *huita*, exists. The chief towns are Havana, Santiago de Cuba, Matanzas, Puerto Principe, and Trinidad. The population may be put down at about 1,500,000.

Puerto Rico.—This fine island, lying between Hayti and the Virgin Isles, is 110 miles long by 40 broad, with a population of over 700,000, about half the number being "whites." It was originally occupied by Spaniards from Hayti in 1509, and with the exception of a short period in the sixteenth century it has remained ever since in the possession of that nation. The island claims to be the healthiest in the West Indies, but as nearly every other island in the Caribbean Sea puts forward a similar claim the question must be left open. It has some excellent harbours and several navigable rivers. It is governed by a Spanish Captain-General, assisted by a military staff. The commercial products of Puerto Rico are very similar to those of the neighbouring colony of Cuba.

Philippine Islands.—These form a large group of about 1,200 islands in the Malay Archipelago, some 400 being inhabited. They were discovered by Magalhaens in 1521, and annexed by Spain about 40 years afterwards. They are of volcanic formation, mountainous, and extremely fertile, yielding abundance of all kinds of colonial produce, and, owing to their large commerce, may be said to be the most prosperous of the Spanish colonies.

Manila, the capital of the group, is on the island of Luzon, and contains a population of over 100,000. Its well-known manufacture of cigars forms the principal industry of the city, which, however, has a large shipping trade. Manila is a handsome and healthy city, but its genial climate is somewhat marred by frequent earthquakes. It was taken by the English in 1762 but restored two years afterwards.

The Caroline Islands.—These islands have been in nominal Spanish possession for some time past, but in so loose a fashion was the connection kept up, that about two years ago Germany laid claim to them. A reference was made to the Pope, who adjudicated in favour of the Iberian claim, and Spain now holds the islands as an adjunct to her government at the Philippines. The sovereignty over the Carolines has been admitted by both England and Germany, as well as that over certain of the Sooloo Islands.

Fernando Po.—This beautiful island is situated in the Gulf of Guinea, between lat. 3° 10′ and 3° 44′ N., and between 8° 22′ and 8° 54′ E. long. Its occupation by Spain has been more than once interrupted, and its tenure does not seem to have furnished many advantages to the mother-country. Originally settled by the Portuguese, it was ceded to Spain in 1778, but England established a military settlement on the island some fifty years later, which, however, was abandoned in 1834. Spain again occupied the island in 1844.

Annabon.—This small island, also in the Gulf of Guinea, is in Spanish occupation, but little is known concerning it in this country, nor of the settlements of Corisco, Elobey, and S. Juan, which are adjuncts to Fernando Po.

Portugal.

The discoveries of her own navigators and those of Columbus seem to have given to Portugal an energetic desire to outstrip her neighbours the Spaniards in the race for colonial settlements. Alike in her South American colonies, as in those previously opened to her by the discovery of the passage round the Cape, we find the same spirit of colonisation at work, with the result that her progress in this direction was as rapid as that of Spain herself. There was nevertheless considerable difference in the policy of the two nations, which has been ably summarised by a modern writer:—

"While Spain aimed at territorial aggrandisement, for the purpose of draining the natives of their acquired wealth and the produce of their mines, Portugal sought chiefly to acquire and control the monopoly of the trade of the countries which she visited, or conquered. She was therefore satisfied with obtaining hold of all the main outlets of commerce on the coast, and did not seek to penetrate into the interior, or to supplant the native governments. Her trade was carried on as a monopoly by the

Government alone, who appointed Governors-General to regulate it. Large numbers of her population emigrated, and settled in the East; and Portugal during the sixteenth century was dominant, without a rival, in this part of the globe, and enjoyed an entire monopoly of the trade."

The conquest of Portugal by Spain in 1580, however, struck a heavy blow at the future of the former country as a Colonial Power, as it involved her in all the wars of the latter, and from this time her power and interest in the East gave way to the stern rivalry of the English and Netherlanders, a rivalry which soon developed into a predominance which has ever since been maintained. The present possessions of Portugal are as under:—

East Indian Possessions.—These comprise Goa with Salsette, Bardes, Diu, and Damao, on the Malabar Coast. Goa itself is a territory of a little over 1,000 square miles in extent, and has been held by Portugal ever since 1510, with the exception of the period between 1807 and 1815, when it was occupied by England. The other settlements were obtained by cession or conquest somewhat later in the sixteenth century, and have always been in Portuguese occupation. The population of the district is about half a million, and the Portuguese keep an army of between 4,000 and 5,000 men in this territory.

Timor, the most easterly of the Sunda Islands in the Malay Archipelago, is a populous island, 340 miles long, and from 40 to 60 miles in width, the occupation of which is shared by the Portuguese and the Netherlanders, under a Treaty signed at Lisbon in April, 1859, the former claiming the northern portion and the latter the southern. The population of the Portuguese portion is returned at 300,000. The principal trade is with China, Singapore, and the islands in the Archipelago, with a growing traffic to Australia.

Macao.—This, the remaining possession of Portugal in the East, is in the Quang-tung province of China at the mouth of the Canton river, and was acquired from the Emperor of China in 1586, subject to an annual tribute, which was discontinued in 1863. It consists of a town and adjacent peninsula about 2½ miles long, and is the principal seat of Portuguese trade with China, as well as the depôt of much foreign traffic. In 1845 it was declared a free port.

West African Possessions.—These comprise several large districts and territories, viz., the Cape Verde Islands, certain

districts in Senegambia, Prince's and St. Thomas' islands, and Ajuda. In addition to these the claim of Portugal was admitted by the Treaty of Berlin, 1884–5, to the territory "from Ambriz to the Congo mouth along the river to nearly opposite Vivi, eastwards to the River Kwango, and south along that river to beyond 11° south latitude, also to a small stretch of coast north of the Congo, including Cabinda and Landana." The total population of the district thus mentioned may be put down at 2½ millions. The navigation of the Congo river is delegated to an International Commission composed of representatives of all the Powers interested in the Treaty of Berlin.

St. Paul de Loanda, the capital of the Portuguese possessions in Africa and the seat of government, is a fortified town with a good harbour, and a thriving trade with Europe and the interior.

Mozambique.—This important colony stretches from Cape Delgado to Delagoa Bay, *i.e.*, from lat. 10° to 26° S., and comprises an area of 382,683 square miles, with 350,000 inhabitants. The boundaries inland are not clearly defined, as is usual in the case of colonies of this character. The rich soil of the coast-line is well cultivated, and produces large quantities of sugar, coffee, rice, indigo, and cereals; the forests are rich in timber, and gold and copper figure among its minerals. Animal life is profuse in the "bush," and fishing for pearls and turtle is as profitable to the seaboard inhabitants as the ivory and skins obtained from the chase are to those of the interior. Mozambique, the capital of this territory, a well fortified town, and a place of considerable commerce, is situated on an island of the same name, at the entrance of Mesuril Bay.

The Netherlands.

Next to England the Netherlands hold the first place as a Colonial Power. In the East Indies especially their possessions are of great value and importance, and are in a very flourishing condition, as was shown by their magnificent display at the *Koloniale en Uitvoerhandel Tentoonstelling* held at Amsterdam in 1883.

One would look for predominance in a Power whose share in maritime exploration, and whose mercantile supremacy two centuries ago are matters of history. It is not so easy, however, to realise that this predominance is a real and accomplished fact which has survived the vicissitudes to which the mother-

country has been subject. While Germany, Russia, Austria, and Italy have done nothing, or next to nothing, in establishing and maintaining dependencies beyond the seas, the Netherlanders have been steadily and persistently taking this course until they now stand second only to England herself in the wealth of their Colonial territory, and dominate over a population whose numbers are in proportion to those of the mother-country as six to one.

It is not necessary to enter here into the steps by which her far-seeing statesmen have built up this splendid dominion, nor to enter into details of the battles which wrung the settlements from the rule of the French and Portuguese—as these conflicts form part of the great struggle for colonial supremacy which was the mainspring of those wars which desolated Europe in the eighteenth century. Of the majority of her possessions she still maintains the sway, while others (notably the Cape) have passed into other hands. At present the Colonies of the Netherlands embrace an area of 682,792 square miles, with a population of 28 millions. Of these possessions by far the most important are the

East India Possessions.—These comprise Java and Madura, with portions of Sumatra, Borneo, and New Guinea, the Riau-Lingga Archipelago, Banca, Billiton, Celebes, the Molucca Archipelago, and the smaller Sunda Isles.

Java, the most important of these and the seat of the executive power, is governed on what is known as the "culture" system, which consists in the main of supervising the labour of the natives in such a manner as to leave them enough food, and allow of a surplus for export to the European markets of the usual colonial products of tea, coffee, sugar, spices, and tobacco, at the same time furnishing a large amount towards the revenue.

The commerce of Java as well as of the other Netherlandish possessions is mainly with the mother-country, the system of differential duties which formerly prevailed preventing development of trade in other directions. This differential tariff was abolished in 1874. A permit from the Governor-General is, moreover, necessary, before Europeans can reside in the island. Notwithstanding the notorious love of liberty in the Netherlandish nation, it is scarcely more than a quarter of a century since slavery in their dominions was abolished.

The ethnography of the island in common with that of the Sunda Isles in general, is as interesting as are its fauna and flora.

The natives are of Malay origin with some infusion of Hindu blood, derived no doubt from the Hindu tenure of the island, which lasted to 1478, at which time it was conquered by the Arabs. The Portuguese formed a settlement on the island in the year 1511, and the Netherlanders in 1575, their rule extending gradually over the island and supplanting the Portuguese. Batavia, the capital, was founded in 1619, but there was a Governor-General at Batavia eight years earlier. Java was captured by England in 1811, and held for five years. It was included in the Treaty of 1816, which settled the Eastern possessions of England and the Netherlands, and since that date has remained uninterruptedly in the possession of the latter country.

Sumatra, the adjoining island, is not so completely under the sway of the Netherlands as Java. Certain settlements on the west coast, and residencies in other portions of Sumatra render Netherlandish influence supreme, and for practical purposes the island may be regarded as under the government of the Hague.

The Netherlanders appear to have first settled on the west coast of this island in 1664. Some twenty years later England established herself at Bencoolen, but the settlements thus founded, together with others which had been subsequently captured, were all ceded to Holland in 1816, together with the Island of Billiton, which England had obtained by cession from the Sultan of Palembang four years before.

Borneo, another of the Sunda Isles, is also partly in Netherlandish possession, the north portion, however, known as "British North Borneo," has been placed under English protection, in virtue of certain Treaties made with the Sultans of Brunei and Sulu, from whom some important concessions were obtained, mainly through the patriotism of Sir Rutherford Alcock. The inhabitants are the Dyaks, who form two-thirds of the population, the remainder being made up of Malays, Chinese, and Europeans. The Dyaks are notorious for their piratical habits, but are gradually acquiring the benefits and drawbacks incident on their contact with Europeans. The principal trade of the island is with China.

New Guinea.—This is another island whose possession is shared between the Netherlands and other Powers. It is divided for political purposes by the 141st meridian of east longitude, all to the westward of this line being in the occupation of the first-named country; the eastern portion is again divided by a line

sloping from west to east; all to the north of this line is claimed by Germany, all to the south by England. The Netherlands portion extends to 147,550 square miles.

The circumstances of the acquisition of the English portion by the Queensland Government, and the tough fight for its annexation with the Imperial Government of the day, will be fresh in the recollection of the public.

It is not easy to determine when, and under what conditions, the Netherlands acquired their "settlements" in New Guinea, nor was their presence there deemed of any great importance. The action of Germany, however, filled the minds of our Australian brethren with apprehension, and stirred up many bitter feelings at the lack of interest manifested by the Home Government, feelings which have not yet altogether subsided.

The climate of New Guinea is very like that of the northern portions of Australia. It is unfavourable to Europeans in the rainy season, and the sea coast is in many places unhealthy, owing to an excess of decaying vegetable matter. The native population, which is of two distinct races, is said to number in the whole island about two millions and a half. New Guinea is remarkable for its birds, which are of the most gorgeous plumage imaginable, as also for the splendour of its insect life.

The Moluccas or Spice Islands are the only remaining possessions of the Netherlands in the East Indies which we have space to notice. They consist, as is well known, of a group of islands between New Guinea and Celebes, famous for their groves of spices, which form the staple produce for the Dutch trade in these regions. They are extremely fertile, and may, perhaps, be accounted the richest colonial possession of the Netherlands. As Sir Rawson Rawson remarks, "It is not possible to fix the dates at which the Dutch became possessed of the several islands in the Molucca group, to follow their varying fortunes in conflict with the Portuguese, Spanish, and English, *or to define the nature of the authority which they now exercise in most of them.*" It may not be out of place, however, to observe that the Netherlanders maintain in their East Indian possessions an army of upwards of 30,000 men, while about sixty vessels of war cruise about their waters for the protection of commerce.

West Indies.—The Netherlands hold in the West Indies Curaçao, Aruba, St. Martin, Bonaire, and the small islands of St. Eustache and Saba. The total area of these is only 403 square miles, and the population about 43,000.

Surinam or Dutch Guiana lies between the English and French portions of Guiana, from which it does not materially differ in its natural features and characteristics. Like all other Netherlandish colonies the chief trade is with the mother-country and her neighbouring possessions in the West Indies. Surinam has long been in the occupation of the Netherlands, having been captured by that country in 1666; it was, however, first founded by an Englishman some thirty years previous. The present area of Surinam is 46,000 square miles, and its population about 56,000.

Denmark.

The colonial possessions of Denmark—like its home territories—have considerably diminished of late years, and are now confined to Iceland with portions of the coast of Greenland, and the islands of St. Croix, St. Thomas, and St. John, in the West Indies. The Farö (or Horse) Islands, may be regarded rather as outlying portions of Denmark itself than as actual colonies.

Last century, however, its colonial territory was more extensive. Leaving the small European island of Heligoland, which was taken by the English fleet in 1807, Denmark had possessions both in India and Africa, which, with the innate qualities of the Scandinavian race, might have been the germs of important colonies.

The Indian possessions were Tranquebar on the Coromandel Coast, which was ceded to Denmark in 1620 by the Rajah of Tanjore, together with certain settlements founded at Serampur in the Bengal Presidency by the Danish East India Company, and the Nicobar Islands occupied in 1756. In Africa, Denmark had a footing at Accra known as Christiansborg Castle, and Fort Quettah on the Guinea Coast.

While, however, France and Portugal have retained their settlements in India, Denmark ceded her possessions on the mainland to this country in 1846, and abandoned the Nicobar Islands two years later. Her African settlements shared the same fate in 1850, being bought by Great Britain at that time.

Both the Farö Islands and Iceland were settled by Scandinavians at a very remote period; both passed under the sway of Denmark on its union with Norway in 1397, and remained so when the two kingdoms were separated in 1814. The Danish settlements on the coast of Greenland were formed by emigrants from Iceland, and are of great value as places of call for the

whaling and fishing fleets who may have occasion to visit those desolate coasts, otherwise they are of little importance, except to the Esquimaux.

Of the three islands which comprise the Danish West Indies, St. Croix is the largest and most important. It is the southernmost of the Virgin group, has an area of 74 square miles, and a population of 18,430, the principal number of which are free negroes. St. Croix, which has been successively in the occupation of the Netherlands, England, Spain, and France, was sold to Denmark in 1733. Its trade is considerable, but like all the West Indies it is suffering from the great depreciation in the price of its raw products. Christiansted, the capital and seat of the Governor-General of the Danish islands, is on the north-east of St. Croix. It possesses an excellent and well-fortified harbour, and is the principal commercial depôt. The other town (Frederiksted) is on the western side of the island. This also is well fortified and has a good roadstead.

Of the other Danish islands, St. Thomas and St. John, the former is of some importance commercially owing to its suitability as a port of call for shipping. It is, however, not fertile, and is subject to severe droughts. St. John, which is immediately to the east of St. Thomas, is without the commercial advantages of the sister island and is consequently less visited.

Sweden.

Having sold her only colony of the island of St. Bartholomew to France in 1877, this country has lately ceased to be a Colonial Power, and there does not at present appear to be any anxiety on the part of Swedish statesmen to regain distinction in this direction, although her polar explorations have been of much international importance.

Italy.

Italy has for some time past been keenly alive to the advantages incident to colonisation, and has been trying to obtain a footing both on the Asiatic and African Continents. In Asia she has made a small settlement on the Bay of Assab, about 243 square miles in extent, and in Africa she has settled at Massowah and incurred a consequent dispute with the King of Abyssinia.

A. J. R. Trendell.

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, ART EXHIBITIONS, SCIENCE, MUSIC, SPORT, LEGISLATION, STATISTICS, CHRONICLE AND OBITUARY, 1886–87.

ARCHITECTURE IN 1886–87.

In this Jubilee year of sunshine and national rejoicing it has been a pleasant practice to look back, over the half-century of the Queen's reign, and contrast the England of to-day with that of 1837 and earlier. Indeed there is much upon which to moralise in the account given in the "British Almanac and Companion," sixty years since, of public improvements in London. We described in our volume for 1828 some of the accidents which then impeded the construction of the Thames Tunnel; to-day, at no great distance from that early masterpiece of Western engineering, the foundations of a new bridge are being laid, and railway trains run through the old Tunnel. Sixty years ago London Bridge was in course of construction, St. James's Park was being laid out in ornamental walks for the public accommodation, Carlton House Terrace was being erected, and a new palace was approaching completion at Pimlico of which, ten years later, in 1837, the Queen had taken possession; and the Marble Arch, now used principally as a stopping-place for omnibuses, had then a reason for existence as a part of Buckingham Palace and the chief entrance to the royal abode. Wilkins was engaged on the National Gallery, arranging his much-abused new building for the "Exhibition" of the Royal Academy and of a valuable though small collection of Old Masters belonging to the nation. The public mind was much exercised as to whether Trafalgar Square should be a large open *place* or an inclosed garden; and Mr. Barry, the greatest British architect of the century, having received the appointment of architect to the new Parliament Houses, was finishing the Athenæum at Manchester, re-arranging Trentham Hall, and doing a huge practice in London and the provinces. At the same time the late Philip Hardwick, R.A., with ominous persistency, was preparing to erect at the Euston Square Terminus a Greek-Doric portico which was as much the tomb of a dead style as the late Mr. Street's Palace of Justice in

the Strand and Mr. Pearson's Cathedral at Truro are in our own. London was then virtually without any system of drainage, and cesspools lay hidden amid and around the foundations of every house. The Metropolitan Board of Works had not been even thought of, and power to raise money for metropolitan improvements was entrusted to the Office of Woods, Forests, Land Revenues, Works, and Buildings, which had taken the place of the old Board of Works.

It was about this period, during the earliest years of the Queen's reign, that the Government of the day appointed the first of a series of Select Parliamentary Committees to consider and report on the best means of housing and concentrating the Public Departments,—with a due regard to economy and their various requirements,—in the vicinity of Westminster and Whitehall. The official history of these forty-eight years is a complicated record of lost opportunities and wasted expenditure relieved with intervals of blank repose, one more of which has just begun. The Parliamentary Session witnessed the complete collapse of Mr. Shaw-Lefevre's expensive scheme for an economic Admiralty and War Office upon a site which, during his administration of the Office of Works, he had already commenced to clear, between St. James's Park, Whitehall, and Spring Gardens; and known as "the Spring Gardens Site." Messrs. Leeming and Leeming, whose design had been placed first in a hurried competition, and who had been entrusted with the preparation of working drawings for the new buildings, have been compensated for non-employment on the proposed work. The opposition to the whole scheme, too real and right to be withstood, was throughout supported by the Royal Institute of British Architects, whose objections were based mainly on the inadequacy of the site and the necessity of opening up a broad avenue into the Mall. Another Select Committee of which Mr. Shaw-Lefevre was a member, and Mr. Plunket, the present First Commissioner, was Chairman, had to reconsider the plans and proposals; and the scheme which the committee in their report called Messrs. Leeming's scheme was abandoned. A sum of 8,000*l.* has been paid to Messrs. Leeming in full satisfaction of their claims, and the latest episode of Government office concentration and reconstruction is that the present Admiralty buildings are to be utilised and extended, and the proposed new War Office is to be accommodated on another site not yet defined. Nothing, however, has been decided or even promised as to the desired

opening, into the Mall, of an avenue which ought not to be less than 100 feet in width, and might well be much more. But a ray of consolation beams from St. Stephen's in the shape of an Improvement Act, which provides for the widening of Parliament Street and of adjacent streets, and for the formation of new streets in the vicinity of Great George Street, Westminster.

The important subject of the re-construction of Central London, which formed an ambitious topic of discussion at the Birmingham meeting of the British Association (1886), has not received much elucidation from the practice of the Metropolitan Board of Works. The new streets recently constructed in the very heart of London appear likely to repeat, on a larger scale, the squalor of the slums and alleys they have pierced rather than removed. Public houses not altogether inartistic in effect, *qud* public houses, are the chief adornments of Shaftesbury Avenue, and cheap dwellings of the worst design and the vilest construction are the most conspicuous buildings which have yet risen to flank the more elegant curves of Charing Cross Road. Nor is there much opportunity of raising in either thoroughfare erections of any importance or size. The plots of land offered by the Board are mostly narrow strips of frontage, having miserable-looking hovels in the rear, or equally dingy workshops, which must be acquired—bought up and pulled down—before any tenant can hope to build satisfactorily on the land he has leased from the Board. Such methods of "improvement" are totally unworthy of the capital of a great nation, much less of the richest city of the widest empire in the world. They are essentially the "cab routes" which a commercial section of the Board intended they should be, and for which the late Mr. Vulliamy, the Superintending Architect, whose own scheme was of a comprehensive and altogether different character, cannot be held responsible. Shaftesbury Avenue and Charing Cross Road, which surpass in ugliness and want of foresight anything that the Metropolitan Board has yet done, will remain, perhaps for generations, a monument of that cheap-and-nasty engineering in which Sir Joseph Bazalgette apparently delights.

The one achievement which has served to respite the Board for yet a few years is not, it appears, to be left alone. The demolition of the block of buildings which formed a part of Piccadilly Circus secured a hearty recognition from Londoners, too pleased to get an open space to criticise its awkward shape, or recall what in competent hands it might have been. Now,

however, in order that the symmetry of Piccadilly Circus may be restored, a building is to be erected to span, like another Temple Bar, one of the cross routes which already make the newly-acquired open space more dangerous, perhaps, than any similar spot in London. Of all the proposals, and there have been several, to spoil the view of Tichborne Street from Regent Quadrant, nothing more grotesque than this has yet been suggested. But the indictment of the Metropolitan Board, whenever it is seriously made by the public, will be raised upon questions of more general import than the many defects, artistic and practical, of Piccadilly Junction. The present condition of the Thames, even at London Bridge, calls for immediate action; from its mouth as high up as Westminster it is little better than the sewer it was before the Metropolitan main drainage—to effect which the Board was called into existence—was undertaken. At the Houses of Parliament it has been found necessary to prevent the contents of the Metropolitan Low Level Sewer from flowing into the drains beneath the building, and to lay down machinery, at a great cost, to remedy the nuisance, which, however, still affects most of the houses in Westminster. Mr. Phillips, C.E., to whose charge the remedial works at the Palace of Westminster were intrusted, has stated that "the sewers in Westminster and Pimlico, as well as the basements of many houses there, are not only flooded to the hydraulic level the foul drainage rises in the Low Level Sewer, but as the drainage fills the Low Level Sewer itself, and overflows thence and fills the sewers connected therewith, it forces the sewage gases generated in the sewers up the gully drains into the streets, and up the house drains, and through the syphon traps into the houses—the Low Level Sewer being entirely unprovided with any other means for ventilating it." This alleged state of things, in the very vicinity of Parliament and the Public Offices, has not been denied. The remedy suggested by Mr. Phillips is to lower at least 5 feet the bottom of the Metropolitan Low Level Sewer between Charing Cross and the western pumping station at Chelsea; and only by such means, if Mr. Phillips be right, can Westminster, the most important section perhaps of the capital, be saved from the disease and pestilence now breeding in its midst.

The event of the year, in sporting phraseology, has been the limited competition for the Imperial Institute, or rather it would have been so if the views of the authorities who control this matter had anything imperial in them. The reverse has,

however, been the case, and what—if the desirability of competition for such a purpose be admitted—should have been a great competition, open to architects throughout the Empire, was restricted to one Scotch, one Irish, and four London practitioners or firms of practitioners. The judges, who were the Lords Carnarvon and Herschell, Sir F. Leighton, P.R.A., Mr. Waterhouse, R.A., and Sir F. A. Abel, placed the design of Mr. Collcutt, F.R.I.B.A., first, and recommended him for employment as architect. The award is a just one, though the general pettiness of the accepted design has not escaped remark. It is, however, as far as conception goes, quite on a par with the character of the whole undertaking, from the moment of the first appeal for subscriptions to the laying of the foundation stone on a site, the choice of which every disinterested person condemned.

One of the best architectural works of the year in London is the new staircase of the National Gallery by Mr. John Taylor, F.R.I.B.A., the Principal Surveyor of H.M.'s Works and Public Buildings. Plans of this building, as Wilkins designed them, were given in the "British Almanac and Companion" for 1837; and the arrangement then necessitated by the division into two parts, for the purposes of the Exhibition of the Royal Academy as well as of the National Collection, was considerably modified when the former migrated to new and more extensive quarters at Burlington House. The staircases which were then constructed on either side of the principal entrance—serving for access to the galleries of the Foreign Schools on the right and the British School on the left—remain in Mr. Taylor's excellent modification as exit stairs; and his new grand staircase is used solely as the public entrance to the galleries. Of course the absence of an imposing vestibule or *salle des pas perdus*—a crying want in most of the new public buildings in England—is felt on entering from beneath Wilkins's portico, but to attempt such a thing under the circumstances was an utter impossibility. The supports of the dome had to be left, and the centres determined by Wilkins of the existing galleries had obviously to be respected. Three arched openings of good proportion have been substituted for the one opening originally under the north wall of the dome, and through these the visitor makes an easy ascent to a landing, whence he may choose one of the three flights of stairs which lead, through vestibules,—facing, and right and left of him—to the several Schools of Painting comprising the

National Collection. Besides the new staircase, Mr. Taylor has added new picture galleries—three large and two small—the design of which favourably contrasts with the overdone ornament and darkened skylights of the galleries added by the late Edward Barry, R.A. The general effect of the new work is harmonious in colour, and quite unaffected as regards the painted decoration which has been executed by Mr. John D. Crace, of the old firm of Crace and Son. The marbles Mr. Taylor has unsparingly used have been brought from Algiers and Tunis as well as from Italy, and to Mr. Brindley's extensive knowledge of the ancient Roman quarries is doubtless due some of the success apparent in the choice and quality of this material. New Zealand has also supplied marble for the sub-bases of the columns, and some of the capitals are of Derbyshire alabaster. The whole of the additions have been completed for 50,000*l.*

The department of the Office of Works under the charge of Mr. Henry Tanner, A.R.I.B.A., has been fully occupied during the year. Post Offices have been completed at Warwick, Manchester, Wisbech, Douglas (Isle of Man), Leicester, Bradford, and Halifax. That of Manchester, begun by Mr. James Williams, F.R.I.B.A., has been completed by Mr. Tanner. It stands on about an acre of land, facing three streets, and the cost has been about 95,000*l.* That of Leicester, erected partly on the site of the old Post Office and partly on additional land, has considerable frontages to two streets; the cost has been about 11,000*l.* That of Bradford which stands on a site of about half an acre below the parish church, and near the Midland railway station, has a frontage of upwards of 200 feet; the building, which is of an extensive character, has cost 25,000*l.* The Halifax Post Office has been erected in one of the new streets (Commercial Street), at a cost of 10,000*l.* Smaller buildings have been completed under Mr. Tanner's direction at Hornsey, Willesden, Kensington, and elsewhere. A site for the extension of the General Post Office in London has been purchased, and the old buildings thereon are in course of removal. The main scheme is already decided, and building operations, it is expected, will shortly commence.

New Metropolitan Police Central Offices are about to be erected, from the designs of Mr. R. Norman Shaw, R.A., on the Victoria Embankment, on the site once to have been occupied by Mr. Mapleson's famous Opera House, so long a thorn in the side of the Metropolitan Board of Works. Northumberland Avenue

has at last been completed by the erection of the Hotel Victoria from the designs of Mr. Florence, F.R.I.B.A., of the firm of Messrs. Isaacs, M.P., and Florence, who may be complimented for having adorned the Avenue with the best and most appropriate façade it possesses. The most perfect clubhouse of the kind in London, and probably in the world, is that now in course of completion from the designs of Mr. Waterhouse, R.A., namely, the vast building for the National Liberal Club, situate at the corner of Whitehall Place and the Embankment. The materials are all good, often sumptuous, and the work is well done, but the ceilings of the principal rooms are overpowering. The faience covering to the shafts of the columns in the large rooms is excellent, and it indicates progress—affording an agreeable contrast with that placed many years ago in the refreshment room of the South Kensington Museum. Not much, however, can be said for the marble staircase, cleverly placed as it is—the design of a staircase being Mr. Waterhouse's strong point—for its curves are inartistic and its details clumsy ; in fact, the general effect is far from refined in spite of the beauty, both in colour and texture, of the marbles employed, and the chief approach to it is dark and uninviting. Nevertheless the clubhouse, remarkable for the size and proportion of its rooms rather than for their decorations, is a practical success, likely to satisfy the wants of the five thousand and odd legislators and other members who are said to compose the National Liberal Club.

Adjoining, and forming part of the same huge block of construction, is a Palace of Flats which bids fair to be one of the many wonders of London. Though erected for speculative purposes it has all the attributes of a public monument, presenting from every point of view a magnificent appearance of solidity and beauty. The external fronts of Whitehall Court, both in general conception of design and beauty of details, are works of a very high order of street architecture, and to those who can appreciate the refinement of the street architecture of Vienna and Paris, they are superior in character and feeling to the fronts of Mr. Waterhouse's new clubhouse. Before, however, attempting any description of Whitehall Court, it may not be unprofitable to inquire into the origin or nature of these blocks of "flats," the erection of which, both in the centre of London and in the outskirts, proceeds with unflagging industry and unabated confidence. Their exteriors are often charmingly effective, more particularly those erected from the designs of

Mr. R. Norman Shaw, R.A., but the vast majority are planned without the slightest consideration for the comfort or even health of those who, in the hurry of fashion, secure them, often before the workmen are out of the building.

Among the first attempts to awaken people in this country to the extravagance of the method, common in Central London, of planning houses of narrow frontage with two or three rooms only on each floor, was the publication in 1855 of a pamphlet entitled "Town Dwellings," by Messrs. Ashpitel and Whichcord, two architects of some note, each in his particular line, and both now deceased. They pointed out how the ordinary London dwelling-house planned for the accommodation of a single family was inhabited by three or four families; and showed how three-fourths of the houses in the heart of the town were occupied as lodging-houses. Their pamphlet was illustrated with model plans for the kind of dwellings they advocated, and they added estimates of the probable cost of erection and of the possible annual receipts and charges. But little or nothing came of their suggestions. The few flats erected in Victoria Street, Westminster, though they found a few tenants, were not run after, and indeed they were hardly known to the average Londoner. Some twenty years later, however, the subject was brought before the junior Architectural Body, and afterwards developed in a paper, read before the Institute of Architects, on the methods of house distribution in Paris. Again, the "Builder," both before and after 1875, energetically advocated the adoption by Londoners of the flat or horizontal distribution of plan for town houses. A letter addressed to the Duke of Bedford, one of the great ground-landlords of the Metropolis, was published and commented on; and some houses-in-flats arose on his Grace's estate. The results have been extraordinary, and at the same time disappointing. The flat residence which is now to be found in every part of London, and in the most fashionable quarters, is a mere jumble of rooms arranged higgledy-piggledy on the same level—an innovation which apparently brings the lucky speculator 8 or 10 per cent. per annum for his outlay, and increases the unfortunate tenants' rents. The old house, with its rates and taxes as well as rent, did not cost, comparatively speaking, a half or perhaps two-thirds of the amount now easily obtained for a flat; the old house with its two rooms over two rooms had at least this in its favour: the several parts of the dwelling were distinct and

separate. The kitchen service was distinct in itself on one floor; the reception and sitting rooms were together on another floor; the bedrooms were apart from both sitting rooms and kitchen. Though the old house entailed the employment of several servants, they were lodged so as not to be a perpetual incumbrance in the sight of their employers. But in the vast majority of flats erected and being erected in London, sculleries and bedrooms open into the same corridor, the kitchen door often faces that of the drawing-room, and the entrance is a narrow passage without light or even ventilation. In many of these blocks the horizontal party divisions between the flats are constructed of inflammable materials totally unprotected by plaster or concrete, and the outer door of each flat generally has glass panels, so that in the event of fire breaking out in the basement speedy and certain death would be the lot of the tenants. The staircase entirely without any means of being warmed constitutes itself a reservoir of cold air laid on, so to speak, to every residence, and a constant source of torture during the winter months. The sets-off to these inconveniences are literally cornices and other projections in stone and brick, which are stuck upon the exteriors in admired disorder; every front is tormented with windows of different shapes, bow, bay—or what not. But all these often delicate inanities of modern design, with which the new flats are adorned both within and without, do not compensate for the want of skill and knowledge displayed by even good architects in the arrangement of these buildings generally, and of the component residences in particular. It cannot be too often repeated that every flat should be divided into three distinct parts, one for day habitation, one for night habitation, and a third for the service. Until this is accepted by the proprietors of these buildings, and by architects, the old London house with all its faults may be considered a healthier, a more comfortable, and a cheaper dwelling than a flat.

Whitehall Court, on the contrary, comes under a different category. The huge building is divided into ten floors, each horizontal division or party-floor being of iron embedded in concrete, and consequently to all intents and purposes fireproof. The stairs and numerous lifts, incased within walls of iron and brick, are to be arranged inside a vast internal area open to the sky, around which the residences are distributed. Some of the flats are of two stories connected by a small stair placed within the flat itself; others have all their rooms on a level;

and all, it is stated, can be so divided as to insure distinct division between the day and night accommodation, and between them and the service pertaining to each flat. But the completion of these residences, as regards their division into rooms, can be effected without any interference with the main points of construction, the internal supports of which are great piers of brick laid in cement, while the external walls are of Portland stone. A would-be tenant can take one of these flats at a rent say of 350*l.*, 500*l.*, or 700*l.*, perfectly free of any divisions, except of course the main supports referred to, and have the open space divided into halls, passages, and rooms, as he may require. The plans and suggestions for such distribution are in the hands of the architects, Messrs. Archer and Green, FF.R.I.B.A., —to whom the highest praise is due for this magnificent block— who propose simply to finish and fit up a few of the residences as models, leaving the rest to be arranged according to the wants of intending tenants.

Blocks of flats are being erected in Piccadilly, from the designs of Mr. W. O. Milne, A.R.I.B.A.; in Victoria Street, from the designs of Mr. E. T. Hall, F.R.I.B.A.; in Mount Street, Grosvenor Square, which is rapidly being transformed, from the designs of several architects, notably Mr. W. H. Powell, A.R.I.B.A.; and close by, new blocks of dwellings for the working classes are being constructed. Mr. J. T. Wimperis, F.R.I.B.A., has also designed several new houses-in-flats in this neighbourhood. At South Kensington, in Harrington Gardens and Collingham Gardens, new houses, detached and semi-detached, erected from the designs of Mr. Ernest George, F.R.I.B.A., are marvels of picturesque composition. At Kensington Court, planted on the site of Baron Grant's exploded palace, rows of houses, from the designs of Mr. J. J. Stevenson, F.R.I.B.A., are remarkable examples of the steady improvement, with which Mr. Stevenson's teaching has had much to do, in the character generally of domestic buildings. Other architects of less note have also worked in the same direction, and the problem of street architectural designs may be said to have been solved, as far as concerns the ordinary residential house of three or four stories.

In Fleet Street, just opposite Child's Bank, a branch office for the Bank of England is in course of erection, from the designs of Mr. A. W. Blomfield, F.R.I.B.A., the style employed by him being what is known as Anglo-Italian of the classical renaissance type.

The famous "Cock Tavern" is gone, and the proprietor, in whose family this historical monument has long remained, told lately, in a letter to "The Times," that he had removed all the fittings, including the celebrated chimney-piece with its carved mantel, and the panellings, seats, and tables, to another house in Fleet Street. Happy nation that cherishes not only its institutions and its trees, but also its tavern furniture! Staple Inn, too, has been sold to the Prudential Assurance Company, whose red terra-cotta offices are on the opposite side of Holborn, but the sale was not completed without protests from more than one quarter; and the public agitation was only half appeased by the authorised statement that the new proprietors had no present intention of demolishing the dilapidated and overhanging gables which form a part of the Inn. Nearer the heart of ancient London a higher form of reverence for the past has been shown. The new approach to the Tower from King William Street is completed, only one or two gaps in the line of frontage remaining to be filled, and the improvement effected by this opening up of the old fortress will become still more marked when the road to the new Tower Bridge is constructed. The Queen's Hall of the People's Palace for East London was opened by Her Majesty in May (1887), and at the same time the foundation stone of the new Technical and Handicrafts School, which forms an important part of the scheme, was formally laid. The Queen's Hall, which is a very noble work, will become the centre of a group of buildings only a portion of which are in course of erection. The architect is Mr. E. R. Robson, F.R.I.B.A., and the ever-moving spirit of the whole undertaking is the indefatigable Sir Edmund Hay Currie.

The mention of good deeds, such as those with which Sir Edmund's life is identified, involves a passing reference to the quiet, unostentatious work done by the Public Gardens Association, in the provision of numerous resting-places for the old and playgrounds for the young, in the more densely populated localities within the metropolis. In the Borough, and at Mile End, Whitechapel, Stepney, and Limehouse, disused burial grounds have been converted into gardens for the use and recreation of the living; and open spaces in various parts of the metropolis have been rescued and beautified by the labours of this Association, for the public good, and without encroachment upon the public purse. Entirely supported by voluntary donations, and served by honorary officers of both sexes, the Associa-

tion resembles one of those benefactors who go contentedly through life unknown and unthanked, satisfied and assured that good is being done. Besides planting trees and placing seats in the public thoroughfares, the Association gives grants towards the formation of public gardens and gymnasia, and opposes all building operations upon disused burial grounds and commons.

In the provinces, the year has witnessed the erection or completion of but few notable buildings.* The Town Hall of Glasgow is a disappointment to those classical students who hoped to see a fine site filled by a fine building, and Mr. William Young's work as it advances betrays a want of boldness not apparent in his drawings. At Preston in Lancashire, the Harris Free Public Library and Museum, a striking and carefully-studied classical building, has been executed from the designs of Mr. James Hibbert, who, with the aid of Mr. E. Roscoe Mullins, has enriched his work with sculpture of a very high order. A Town Hall at Motherwell, N.B., with a clock tower of good outline, is being erected from the designs of Mr. J. B. Wilson, A.R.I.B.A. At Eastbourne, the Town Hall, of which Mr. Foulke is the architect, has been completed. At Portsmouth, the foundation stone of a new Town Hall was laid in October, 1886, the architect being Mr. William Hill, F.R.I.B.A., of Leeds, from whose designs the Town Hall of Bolton, which has been the model of the Portsmouth building, was erected about fourteen years ago. At Leeds, an addition has been made to the Yorkshire College, for the accommodation of the Engineering Department; an excellent block of offices in red brick and terra-cotta has been erected for the "Yorkshire Post," from the designs of Messrs. Chorley and Connon, FF.R.I.B.A., who have also completed during the year the Church of the Holy Name, in Leeds, and the Church of St. Michael and All Angels, at Farnley. At Birmingham, the foundation stone of the new Law Courts, the architects of which are Mr. Aston Webb, F.R.I.B.A., and Mr. Ingress Bell, A.R.I.B.A., was laid by the Queen in May of the present year (1887). At Manchester, the most important work in hand is at Owens College, where Mr. Waterhouse is engaged upon new buildings, the design of which shows him at his best.

* Some of these were noticed by Professor T. Hayter Lewis, F.S.A., in the article on *Architecture* in last year's "British Almanac and Companion;" and so comprehensive was the list of new buildings therein given by the Professor, that it has been thought desirable, in the present article, to take a more general view of the subject, and so avoid repetition.

The Manchester Jubilee Exhibition, which will be remembered for its thirteen galleries of the choicest paintings in oil and water-colours executed by British artists during Her Majesty's reign, had also an exhibition of architectural designs, due entirely to the energy of the Manchester Society of Architects. The Jubilee Exhibition Committee not having included Architecture in the Fine Art Section, the Manchester architects offered to procure and hang a representative collection of drawings illustrative of buildings erected during the last fifty years. The offer was accepted, and Mr. Murgatroyd, F.R.I.B.A., President of the Manchester Society, with Mr. Waterhouse, R.A., and Mr. Redmayne, F.R.I.B.A., were elected a sub-committee with seats on the Fine Arts Committee of the Exhibition. Through their exertions a remarkably fine collection of drawings, some by the late Decimus Burton, Sydney Smirke, R.A., Sir Charles Barry, R.A., Professor Cockerell, R.A., Sir Gilbert Scott, R.A., and Edward Walters, was procured, and admirably hung in a most prominent position. Among the works of living architects exhibited might be noticed Mr. David Brandon's country houses in Sussex and Devonshire, Mr. Waterhouse's beautiful drawing of the Manchester Assize Courts, which gained for him the Gold Medal at the Paris International Exhibition of 1867, and those of Eaton Hall, Cheshire, and Owens College, Manchester. Mr. James Brooks, F.R.I.B.A., was represented by views of four churches erected in and near London, of St. Mary, Woolwich, and of St. Peter's, at St. Leonard's-on-Sea. Some of Mr. Worthington's designs and the views of his works, particularly those in Manchester, could not fail to attract attention; while the charmingly-composed Stations for the Mersey Railway, by Mr. Grayson, F.R.I.B.A., of Liverpool, were among the few frames sent by the architects of that city. Here, also, as one of the more trivial amusements, was a representation of "Old Manchester," designed by Mr. Alfred Darbyshire, F.R.I.B.A., on the lines of "Old London" at South Kensington, showing a picturesque arrangement of Manchester and Salford streets as they never have appeared at any one period of their existence. By combining and grouping facsimiles of historical buildings, of every epoch, beginning even with a Roman gateway, no fair representation of Manchester as it was can be obtained. It is as if, to change our lakes to ocean, we were to attempt to show an old European city with wood and canvas effigies of the Parthenon, the

Pantheon, St. Sophia, and St. Peter's, interspersed among a mass of mediæval churches, monasteries, and castles. The reproduction, at the Newcastle Jubilee Exhibition, of the old Tyne Bridge was of a different character, for it showed to a reduced scale—with perhaps a pardonable artistic licence—what that bridge, erected in 1250, was in the year 1771, previous to its partial destruction.

The great loss of human life occasioned by the burning of the Exeter Theatre, erected some years ago from the designs of the most experienced theatre architect of the day, has led to some amateur criticism upon the planning of such buildings, and to the expenditure of a great deal of indignation upon the architect who, in this regard, as the servant of his employer, has to cut his coat according to his cloth. The destruction of the Opéra Comique, in Paris, from a similar cause, which preceded the English calamity, served to intensify the dismay with which the public appear to have learnt the facts at Exeter. In both cases the architects have received from the Courts their share of blame for the terrible results, and that of the Opéra Comique is to be tried for manslaughter. But in England, at least, where a theatre is a private speculation—which, if it is to continue, must return to all the several parties concerned a good margin of profit—the greatest culpability rests with the authorities who approve and license the building, and with the managers who, defiant of those same authorities, not only crowd its gangways with standing spectators, but even erect all kinds of obstacles to speedy exit. Anyone who has watched the crowd leaving a London theatre, even of the best and most commodious kind, and marked the time it takes to accomplish the emptying of every portion of the house, cannot doubt for a moment but that in a panic, such as is caused by the sight of fire, a large part of the audience must inevitably suffer injury and death. In the matter of theatres the public safety depends far more upon the management of the interior, than upon the distribution of passages and exits; and the most dangerous places of entertainment, even in the fashionable parts of London, are not the theatres, but rather those halls, frequented by people who rarely go to theatres, and who, coming from stalls, area, and galleries, meet, as it were congested, in one narrow throttle-valve, leading to an almost equally narrow passage often of considerable length, through which access to the street can alone be gained. If theatre-burning is eventually to involve the hanging, either

moral or physical, of some one, juries should be encouraged to seek the right culprits in the right place, which, in the Metropolis, is not difficult to find.

The obituary of the year includes the names of several well-known architects, and that of a well-known First Commissioner of Works, Mr. A. S. Ayrton, who was born in 1816, was called to the bar in 1853, and elected four years later to Parliament as member for the Tower Hamlets. He held office under Mr. Gladstone between 1869 and 1873 both inclusive, and as First Commissioner effected useful improvements in the administration of Her Majesty's Works and Public Buildings which have been of permanent benefit. One of the oldest surviving members of the profession, Mr. Ambrose Poynter, born in 1796, who was a fellow-worker with Sir Charles Barry and Professor Cockerell, is deceased; and so also is a less-known architect, born in 1806, Mr. R. C. Hussey, of Harbledown, near Canterbury, who was a partner of the late celebrated Thomas Rickman, and whose executed works were numerous. Both Mr. George Vulliamy, F.R.I.B.A., Superintending Architect of the Metropolitan Board of Works, and Sir Horace Jones, a Past President of the Institute of Architects, and Architect to the Corporation of London, have died since the issue of the last "British Almanac and Companion," the career of the latter having been the more conspicuous and eventful of the two. It was largely due to Sir Horace's latent energy and characteristic determination that the scheme of the Tower Bridge was brought into practical shape. His death has deprived him of a just enjoyment of honours that would assuredly have awaited him on the completion of the work now in course of execution under the charge of Mr. J. Wolfe Barry, M.Inst.C.E. The death of Mr. George Goldie, A.R.I.B.A., occurred in March of the present year (1887). Among his many works, St. Wilfred's Catholic Church, at York, is one of the most striking; and he was the head of the firm (Goldie, Child, and Goldie) whose design for the new Catholic Church of St. James, in Spanish Place, London, was placed first by the late Mr. Fergusson, the assessor in the competition for that building, now in course of erection under the superintendence of the late Mr. Goldie's partners.

The losses sustained by the architectural profession during the last few years have been so numerous, especially among the older and better-known men, that a dearth of leaders may be said to have set in. There never was a time, however, in

England when the young men gave evidence of greater promise than now. The only apparent danger lies in the fact that too many of them regard architecture as an art of delineation and decoration, rather than construction, and when they get into practice are compelled to delegate the scientific moiety of their duties to specialists and quacks.

A most encouraging feature of the time is the uniformly characteristic freedom indulged in by practitioners in their adaptation of architectural forms and features. The pointed arch is rarely visible in the newest buildings; the trefoil, quatrefoil, and, indeed, cusping of any kind, are gone. The progress of civil and domestic architecture, both in the provinces and in London, is very marked. English country houses surpass in picturesqueness and really artistic effects anything that contemporary architects on the Continent of Europe have yet attempted in the same direction. The sham Tudor castle, the Louis Quatorze château, the quasi-palace of the "Vitruvius Britannicus" have given place to something indubitably English. In support of this assertion it will be convenient to cite a distinguished Parisian architect, M. Paul Sédille, who has contributed several articles on this subject to the "Gazette des Beaux Arts." The genius of the English nation, he argues, does not lie in its civil or its religious monuments, though he admires some of the newest churches, but rather in the domestic buildings whereby a people gives expression to its wants, its tastes, and in fine, as he puts it, its ideal. In his fifth and last article in the "Gazette" (April, 1887), he maintains, and he writes with some authority, having spent a considerable time in this country,—"Nulle part en Europe, nous ne pourrions trouver une architecture privée qui, dans sa généralité, bien entendu, fût aussi caractéristique et nationale et qui en même temps, par la logique de ses formes et de sa construction, répondît aussi bien aux lois essentielles de l'art. C'est pourquoi nous donnons à l'architecture privée Anglaise une place importante dans l'art contemporain de tous les pays." M. Sédille is a Corresponding Member of the Royal Institute of British Architects, and a contributor to the current volume of "Transactions" published by that body, in which "An Essay on the Revival of Coloured Architecture in France," printed in French and English, appears from his pen.

The same volume of the "R.I.B.A. Transactions" contains a paper, in excellent English and well illustrated, by Signor Boni,

architect to the Ducal Palace, and a descendant of the Master-mason of the Ca' d'Oro, Venice, which latter was the subject of his interesting communication; a learned paper by Mr. William Simpson, R.I., on "Mud Architecture in Persia and other Countries," partly the result of his experiences with Sir Peter Lumsden, and during the last Afghan War, which afforded information of the highest interest; some valuable notes made in Greece by Professor T. Hayter Lewis, F.S.A., in 1881 and 1884; a paper by Mr. Josiah Conder on "Domestic Architecture in Japan," in which country he is a Government architect; a paper on the "Architecture of Dalmatia," by Mr. T. G. Jackson, M.A.; and other important papers, to most of which a large number of illustrations are attached. The volume is further enriched with a re-edition, enlarged and revised, of Mr. Wyatt Papworth's two papers, originally printed in 1860, on "The Superintendents of English Buildings in the Middle Ages," including researches into the history of the Master-masons and masons, which show that there exists little or nothing to connect the chartered guilds of Masons and Freemasons (noticed in the statutes of 1360 and of 1425) and the artificers, handicraftsmen, and labourers of 1548 with the companies or lodges of Freemasons mentioned by Ashmole in 1646 and 1682,—that, in fact, the Freemasons of to-day are not the descendants of the Master-masons who, Mr. Papworth believes, "were generally the architects during the mediæval period in England."

Another of the publications of the Institute, the "R.I.B.A. Journal of Proceedings" (1886–87), is the fullest yet issued, its eighteen parts containing 420 quarto pages, showing conclusively that the session has been one of more than usual activity. The fact that Mr. Edward I'Anson, the President, whose term of office commenced in May, 1886, happened to be the Senior Fellow of the Institute, having been elected in 1840, and that he was able to look back over more than half-a-century of practice, gave to his opening address an unusual degree of interest. He dwelt on the necessity of improved means of education, declaring himself an advocate for the systematic teaching of art, as far as it can be taught, and of all the sciences pertaining to the theory and practice of building construction. He stated that he looked to the Royal Academy, not only to carry out the provisions relating to architecture as laid down at its foundation, but also to develop the educational powers with which it is

entrusted. The address also contained an allusion to the rise within the United States of a school of much artistic power, of which the late Mr. H. H. Richardson, of Boston, might be considered the originator, and the President referred at some length to the short but brilliant career of that talented architect, the most accomplished that America has produced.

The Royal Gold Medal, annually given by the Queen, on the recommendation of the Institute, to an architect or man of science of any country who has designed a building or produced a work tending to promote the knowledge of architecture, was this year (1887) conferred on Mr. Ewan Christian, Architect to the Ecclesiastical Commissioners.

An attempt was made by the Institute to obtain some amelioration of the lines of frontage laid down by the Metropolitan Board of Works at the junction of the new street (Charing Cross Road) with St. Martin's Place, more especially in regard to the National Gallery. The Council of the Institute suggested that power should be obtained to close and appropriate Hemming's Row (the remnant of a narrow street running at the back of the National Gallery), which, with the isolated plot of land (known as containing a public-house still standing) north of the row, should be acquired for the purposes of the National Gallery. But the matter was practically settled in the House of Commons, on the 24th February, 1887, when to a question put by Mr. Whitmore,—whether the Government would take advantage of these street improvements to extend the National Gallery in accordance with the suggestion of the Institute of Architects,—the First Commissioner of Works replied that he had "no funds for any building operations," and, as it has turned out, did not intend to ask for any from Parliament.

The Institute, on the suggestion of the Fine Art Committee, of the Adelaide Jubilee Exhibition, sent out to Australia a small collection of photographs of new buildings executed in this country, from the designs of well-known architects practising in various parts of the country.

Two examinations in architecture were held in London, one in November, 1886, and the other in March, 1887. Forty-five applicants were examined, thirty-three of whom passed, and were declared qualified for candidature as Associates of the Institute. During 1886–87 thirty-eight passed candidates were admitted to the Associateship, and twenty-four Fellows, nine of whom were previously Associates.

Extended powers and privileges granted to the Institute by The Queen in Council, in a Supplemental Charter bearing date 28th March, 1887, are likely to exercise an important influence upon the future of the architectural profession. The Institute has been empowered to hold such examinations for membership or otherwise as the corporate body may think fit to establish within the United Kingdom, or India, or any British colony, and to grant diplomas or certificates in connection therewith. Every person desiring to be admitted an Associate is now required to pass an examination; and after March, 1892, every person desiring to be admitted a Fellow will be also required to pass or to have passed an examination. By the terms of the same document, the Council of the Institute are authorised to apply the corporate funds to furthering professional education.

A General Conference of the Architects of the United Kingdom was held in London during the first week in May (1887), which was largely attended, and the most important of the subjects discussed was that of Education. At the Third Conference Meeting, Mr. Arthur Cates, Chairman of the Board of Examiners in Architecture, occupied the Chair, and papers were read by Professor Babcock (Cornell University, Ithaca, N.Y.), Mr. A. Hill (Cork), Professor Aitchison, A.R.A., Professor T. Roger Smith (University College), Mr. Lawrence Booth (Manchester), Mr. Gotch (Northampton), and others. The meeting passed the following resolutions :—

That it is desirable that the guidance and direction of the education of those entering the architectural profession should be undertaken by the Royal Institute of British Architects.

That to realise this end the Institute should prepare a scheme of a complete system of examination.

That such system should comprise : 1st, a *Preliminary Examination* for pupils entering the profession as a test of general knowledge, those passing this to be "Probationers R.I.B.A;" 2nd, an *Intermediate Examination* for pupils in their third year or earlier, for the general principles of art and construction, those passing this to be "Students R.I.B.A. :" 3rd, a *Final* and *Pass Examination* to qualify for A.R.I.B.A., at twenty-three years of age or earlier; and that no subscription be required from "Probationers" or from "Students."

That this system should be arranged with the co-operation of

the local Societies by whose agency the details of the examinations could be carried out.

At the other meetings several professional questions were discussed, but none of the same importance to the public as that described. The conference terminated with a dinner at the Freemasons' Tavern, at which the Presidents and other representatives of the Royal Academy, the Society of Antiquaries, the Institution of Civil Engineers, the Surveyors' Institution, and of several of the local societies of architects, including those of Melbourne and Auckland, were the guests of the Institute.

At the Royal Academy the Chair of Architecture, vacant for several years, has been filled by the appointment of Mr. George Aitchison, A.R.A., as Professor. Proposals involving important modifications in the constitution of the Royal Academy are said to have been submitted to a general assembly of that body, urged it is believed to action of some kind by the letters published in "The Times" from Mr. Holman Hunt and others, and inadequately answered by Mr. H. T. Wells, R.A., the volunteer champion of the Academy who signed himself "R.A." But barely anything, at least anything worth having, will come out of any such half measures as those now proposed by Mr. Wells, and referred, it is said, to a special committee. Nor is any permanent good likely to accrue from even the best scheme of reform, while the President, Sir Frederic Leighton, remains the very incarnation of Painting, Sculpture, and Architecture in their most seductive shapes; and, as the spokesmen of artists, constitutes perfection. Moreover, the Royal Academy, whose Minutes are signed by the Queen, is virtually above the law. Like an impregnable fortress in a modern war, an invading army should avoid it, or get round it or behind it, but not attack it, preferring to leave its conquest until the country far and wide is subjugated, and things are ready for the inevitable protocols and treaties which grow out of war and rumours of war. Smaller and rival bodies, constituted on the original lines of the Royal Academy, are now grown up to man's estate, and little disposed as yet to quarrel with an academic system, some of the abuses of which they have copied, and the restrictions of which first brought them into existence. Architecture which has been long the sport of the Royal Academy, although it owes the "instrument" of its foundation to the architect, Sir William

Chambers, has progressed in spite of Academic indifference, and ere many years are over, the serious part of an architect's education will have to be acquired in some school or college other than that of the Royal Academy, which simply turns out draughtsmen. But even in drawing the Academic instruction is so slight,—the architectural school being open for only six hours a-week in the evening,—that a studio for young men desiring to become architects has been started in Heddon Street, Regent Street. It is open every day and evening in the week, under the joint direction of Mr. F. T. Baggallay and Mr. W. Millard, both of whom have passed the examination in Architecture, and received the highest honours that the Academy and the Institute can bestow on students. This studio is worked on the principle of the French *ateliers* which had such a marked influence on the architecture of Paris in its best days.

Professor Aitchison's three lectures at the Royal Academy were on "Doorways," "Windows," and "Balustrades." The other three Academy lectures devoted annually to architectural subjects were given by Mr. Middleton, M.A., Slade Professor at Cambridge, who treated also of sculpture in connection with architecture. Lectures were delivered at Carpenters' Hall, under the auspices of the Worshipful Company, by Mr. Banister Fletcher, F.R.I.B.A., Professor Kennedy, M.Inst.C.E., Mr. F. Chambers, F.R.I.B.A., Professor T. Roger Smith, F.R.I.B.A., Professor Church, M.A., and Mr. Lacy W. Ridge, F.R.I.B.A., whose lecture, the fourth of the series, was a valuable essay on "Timber House Fronts." The more notable of a course of lectures delivered at the Institute of Architects in 1865 have been published for the first time in the current volume of the Institute Journal; and as their authors are all dead, there is a melancholy interest attached to their remarks. Three of the lectures on the History and Literature of Architecture are by Sydney Smirke, William Burges, and Digby Wyatt; one on Perspective and Colour is by John W. Papworth; the subject of Physics is treated by J. Spencer Bell; and a summary of the lectures, by Arthur Ashpitel, is also given.

The influence of the professional illustrated press on the architecture of the day accounts in a great measure for the rapid spread of new fashions in design, not only in this country but in the Colonies, in India, and even in America. The London papers are eagerly scanned and studied beyond these shores, while the beautiful illustrations issued with the "American Architect"

(Boston, U.S.A.), and the "Inland Architect" (Chicago), are similarly sought after here. In England the lead has been well maintained by "The Builder," edited by Mr. H. H. Statham, F.R.I.B.A. To the many periodicals of this kind, now in full vigour, has been added another, "The Building World," issued monthly, the artistic portion of which is edited by Mr. J. P. Seddon, F.R.I.B.A. The still-prevailing type of illustration, due no doubt to its cheapness, is the photo-lithograph obtained from a pen-and-ink drawing, a now comparatively old method, but one in which very few artists excel. Undoubtedly the "Rambling sketches" by Mr. Raffles Davison in "The British Architect" are the best of the kind; the charm that attaches to them is nowhere visible in similar work, except perhaps in some by Mr. Herbert Railton, A.R.I.B.A., who has handled the *burin*. It is a pity that Mr. Raffles Davison has not aspired to follow Mr. Haig, and transferred his rare talent to the copper plate.

The commercial value of picturesque draughtsmanship to work-a-day architects was never greater than it is at present, and with those who practise architecture simply as an art, draughtsmanship assumes the chief place. Competitions are often won by a clever drawing quite as much as by a good plan, even when an expert is employed to decide; and the public need not wonder if the executed building falls short in their eyes of the design as it appeared on paper. To please, a design must have nothing modern about it; on paper the new building must have the appearance of having survived some centuries of wear-and-tear. In the Royal Academy Exhibition (1887), the eye lighted on sketches of dilapidated historical edifices, apparently in Nuremberg or Prague, or some old-world French city, but which on nearer inspection were found to be new designs intended for execution in England. One of these surprises was the proposed Albemarle Hotel by Mr. Ernest George about to be erected in Piccadilly; another was the Redesdale Hall, Moreton-in-Marsh, a memorial building by the same architect, erected at the cost of Mr. A. B. Freeman-Mitford, C.B., until recently the accomplished Secretary to the Office of H.M's. Works and Public Buildings, and the fortunate inheritor of the late Lord Redesdale's property. Archæological affectation, except of course as a current matter of business, can go no further. The scenic character of such designs is to some extent on a par with the painted boards of "Old Manchester," and both are charming. But the public will eventually get behind the scenes,

if they have not already done so; and even among the architects some practitioner, now in the fifties, while looking at these "built out" representations of edifices, which for a generation he has been imitating in solid materials, must feel a twinge of remorse. The "mystery," the archæological learning, the technical secrets of his life, he sees combined in full-sized mimicry, as part of a shilling show. Any effort of indignation would, however, be thrown away, for after all a good deal of the work he is even now doing is "built out" much in the fashion of "Old London," or "Old Edinburgh," or the "Old Tyne Bridge." Take the newest cathedral, for instance, which is not yet half finished. It is a clever replica of a building that was the slow growth of centuries, during which the latter had been made to supply, by every kind of alteration and addition, the varying wants of a state of civilisation quite different from and in many senses directly opposed to that of the present day.

What are the facts? Is it not the pride and the boast of living men to know them? The cathedral before there was a thought of restoring it, as restoration is now understood, was a charming medley of irregularly-grouped buildings with steep gables, lofty towers and spires, and cloistered courts. In the beginning it had been erected according to a uniform plan, which served as the model for such buildings throughout Christendom. In course of time it was found to be too small for the wants of the population; it was enlarged by the erection of aisles and chapels, which were added on where they would be most serviceable. The nave perhaps was lengthened, or the transepts were widened. One or two or more windows were enlarged to afford better light in a particular corner, and another pattern of tracery was inserted. Ultimately the western towers were thought insufficient, and it was determined to rebuild them. But the Master-masons did not at once pull down the original towers; they began by cutting into one only, removing a portion of it, and in the hole thus made they inserted a part of the wall of the new tower. Bit by bit the new tower rose, always in accordance with the ideas current among the workmen of the time. Years flew away; other men came and went, and the work was often continued or completed by those who had no knowledge of the intentions of the original designers. The wants of the day altered, men's minds changed, and the new tower or the greater portion of it was left unfinished; or if perhaps it was finished, no attempt was made to rebuild the companion tower. Thus

the west front was left with one tower larger than the other, and of a different design. Perhaps both were ultimately adorned with spires, one of which at a latter date it was found necessary to remove. Every other portion of the cathedral had been treated in a similar fashion ; and so had every other cathedral, as well as every church, and château, and town-hall, existing during the Middle Ages. Thus the mediæval fabric, having survived the injuries of the Reformation, lingered through the period of the Renaissance until the era of Horace Walpole, Sir Walter Scott, and the Pugins, when the revivalists simply copied, or tried to copy, what they found, reproducing—with greater exactness as time progressed—every makeshift, every rectified blunder of construction, every irregularity of plan, with which chance, or freak, or ignorance, had endowed the mediæval work. And now the architects having planted all over the country more or less exact copies, to various scales, of churches and cathedrals as they were left by the Master-masons of the fifteenth century, or the thirteenth or fourteenth as the case may be,—having thus educated themselves to a high degree of excellence, and having led the public to appreciate the artistic character of their labours,—a millennium of no thoroughfares is reached, and the "mystery" of the mediæval masters has become an exhibition for the vulgar.

Nay more, the public are contented with what they have got, and forbid the very thought of change. Some architect, wiser than his fellows, perhaps believes that a great public improvement will be effected by pulling down an old building or a portion of it ; or conscious of the practice of the Middle Ages, he proposes to alter one, perhaps for the sake of additional light, when he is at once stopped by the very public he has helped to teach. He is derided and abused for that so-called vandalism (and why so hard on the Vandals ? Why not give the Goths a turn, and call it with equal justice and truth, gothicism ?) which, in all countries and in all ages, has been the prolific parent of architectural styles.

This ultra-conservatism, however, which is really very flattering to architects, has done a great deal of good, for it has destroyed the "restorer." That the affectation will not outlive the century may be confidently anticipated. The artistic follies and excesses of the time are so many preludes to transition and change. They are signs also that the public—who have now something to say about architecture even before they know what

it means—intend to assert their due share of proprietorship in the historical monuments of the country. Nowhere has this been more apparent than in a recent great, though limited, competition held in Liverpool, where a cathedral is wanted. In the second city of the Empire, certain architects who were selected to submit designs, three in all, have lately afforded their brethren and the public an opportunity of expressing, by means of their art, the current state of thought concerning architecture. Another, Mr. Ewan Christian, the professional assessor employed by the Liverpool authorities to adjudicate on the designs, has also given his views in a report which, from its vagueness and indecision, has aroused much comment and the suspicion of a desire to revolt. The three designs were respectively submitted by Messrs. Bodley, A.R.A., and Garner; Mr. James Brooks, F.R.I.B.A.; and Mr. William Emerson, F.R.I.B.A. The adjudicator has expressed his preference for Mr. Emerson's design, partly because that gentleman has "attached much importance to the embellishment of the city by the striking and massive external proportions of his building;" and Mr. Christian states his belief that the design if carried out will be "a substantial addition" to the architectural beauty of Liverpool. But prior to this, the report, which is more of an argument than an award, assumes that a new cathedral for Liverpool should be "a church of grand proportions and noble form," that it should have "a spacious interior well suited for the teaching and worship of multitudes;" and that it should be like Santa Croce, at Florence, "at once a place for grand religious teaching, and for beautiful memorials of truly worthy citizens." Thereby Mr. Christian shut out from consideration the mere copy of any, even the noblest, English cathedral, or the mere adaptation and stringing together of the parts of one; he shut out the designs of Messrs. Bodley and Garner, and of Mr. Brooks. He also saddled his admitted preference for Mr. Emerson's design with a statement to the effect that he would have still further preferred an English Gothic design if among the three there had been a thoroughly satisfactory one. But the chief feature of Mr. Emerson's design is a dome, of which there exists no example in English Gothic architecture; and it was the dome that attracted, and very properly attracted, Mr. Christian's attention. There is also marked evidence in all the drawings of Mr. Emerson's scheme, of a desire to break loose from the trammels which must necessarily bind an architect who attempts to design a cathedral, especially in

England and in competition with others. Once encouraged to work out his design on the lines of his magnificent plan, and given sufficient time to do so, Mr. Emerson may make of the new cathedral one of the great edifices of the world, and with his practical knowledge of the dome as it is constructed in India, may yet create one that shall be beautiful, both within and without, and full of sunlight withal. The great want of Liverpool, seen from the Mersey, is some distinguishing landmark; the flatness of the skyline is a perpetual reproach to its citizens, who rarely fail to express their regrets at the absence of one. They envy the metropolis its dome—

> A mighty mass of brick, and smoke, and shipping,
> Dirty and dusky, but as wide as eye
> Could reach, with here and there a sail just skipping
> In sight, then lost amidst the forestry
> Of masts; a wilderness of steeples peeping
> On tiptoe through their sea-coal canopy;
> A huge, dun cupola, like a foolscap crown
> On a fool's head—and there is London town!

Byron had brought Don Juan to the banks of the Thames, and was in his tenth canto, when he wrote that; the author of "Childe Harold" had outlived his early impressions of Florence, which he described in such noble language. The citizens of Liverpool, however, will gladly forgive the poet who may dare to write of it thus, provided only he be enabled to do so without inaccuracy. The cathedral that Mr. Emerson, if left alone, can produce in Liverpool is what the majority of the inhabitants really want, rather than any repetition, however beautiful, of archæological effort. But no decision has yet (October, 1887) been announced by the Cathedral authorities.

Everything tends to show that architecture, if it is to regain the eminence it once held as the chief of the arts, or even to maintain its present position, must follow the ordinary routes of life, and be identified with material progress, with healthy and useful innovation, with, in other words, the new and the real. If the artistic world will see this, as the scientists have long seen it, architecture may take its proper place in England, perhaps at no distant date, among the occupations of great and ambitious minds. But if architects close their eyes, and choose to ignore what is passing around them, they will succumb beneath an irruption of practitioners of the minor arts; and the triumph of the Science and Art Department will be complete. Only as late as the 29th July last (1887), a favoured

correspondent in "The Times," on "The Need of a Science Museum," gave his notion of what the architecture of a modern building means, at least in his eyes. Like the Imperial Institute promoters he is in a hurry, and grudges the time likely to be wasted over vestibules and courts, galleries and corridors. He wants a shell, &c. "The crying want of the present time," to use his own words, "might be met by a mere shell, so to speak, of a building." That crying want is a Science Museum, and here is how the scientist would do it. "Bit by bit as, and if, the scheme justifies itself, the shell might find itself incased in an exterior as fair as any other of the public buildings, if that were considered to be necessary, so as ultimately to be a fitting companion to the Imperial Institute." That is the scientist's conception of architecture as he sees it to-day: something to be fixed on after the shell or carcase is erected or put together, perhaps in plaster, terra-cotta, or *carton pierre*. It is more than ten years since Professor Huxley said to an American audience:—"Whenever you begin to build, get an honest bricklayer and make him build you just such rooms as you really want, and a century hence, if you have a few hundred dollars you don't know what to do with, send for an architect, and tell him to put up a façade." If the Professor be still impenitent, he may urge that the advocate of the new Science Museum, in "The Times," is of his way of thinking. He may also plead extenuating circumstances, and point to some of the most admired architectural works of the present day as his justification and defence.

THE ART EXHIBITIONS OF THE YEAR.

THE exhibitions of the year show no falling-off either in quantity or in quality. On the contrary, the retrospective exhibitions, like the winter gathering of old masters at Burlington House, with its magnificent and well-arranged series of finely-preserved water-colour drawings by Turner, which enabled the student to trace the progress of that great genius from his boyhood to maturity with a completeness never before possible; the splendid collection of the Van Dycks at the Grosvenor; the Jubilee Exhibition at Manchester, where English pictorial art was represented by nearly all the masterpieces of English painters produced during the memory of living men, not to mention some minor local exhibitions like that of the works of J. Stark, of Norwich, were of unusual interest. The exhibitions of current art, though not distinguished by many pictures which will hereafter serve as landmarks in the history of British painting or sculpture, were technically of high average merit, and contained a number of works, small and large, which show that the artistic intelligence as well as the skill of English artists is widely spread, and that they are assimilating the lessons learnt in a long period of uncertainty and transition. What has been good in the extravagant impulses of cliques, and what is valuable in the foreign methods of execution, are beginning to have their effect, not in thoughtless following of other eccentricities as was the case some years ago, but in the education of the painter, by widening his scope and increasing his powers of self-expression. While serious and worthy efforts are being made in imaginative art more genuine and less academical than formerly, the tendency of modern art is still towards unaffected and faithful rendering of natural scenery and natural life as seen by artists with their own eyes, but this realism (if it can be called so) is different from the realism of what seems but yesterday. In portrait, and landscape, and pictures of foreign life and manners, the prevalence of the mere "transcript" has disappeared, the portrait is less often a common-place or a flattery, and convention and false sentiment, aimlessness and perverseness, are being replaced by fresh observation, genuine feeling, certainty of aim, and sincerity in self-expression. Progress,

therefore, if not very rapid and startling, is sound and widespread.

Setting aside the collection of Turner drawings, most of the finest of which were from the portfolios of Mr. Henry Vaughan, Mr. J. E. Taylor, Mr. Bolckow, Miss Julia Swinburne, and Sir Richard Wallace, English art was scarcely so well represented as usual at Burlington House in the winter. Appropriate to the Jubilee year, but of a value historic rather than artistic, were the four pictures of important events in the Queen's life, "Her Majesty's First Council" by Wilkie; "Her Majesty receiving the Sacrament after Her Coronation" by Leslie; the Queen's portrait by Shee (1843), and "The Christening of the Prince of Wales" by Hayter. Of the two great lights of English portraiture, Gainsborough was better represented than Reynolds. The Marquis of Lothian lent full-lengths of the Earl (2nd) and Countess of Buckinghamshire, the Earl of Carnarvon, full-lengths of the Earl (5th) and Countess of Chesterfield; Mr. Agnew sent an interesting bust of Viscount Mountmorres in a green coat; Mr. James Price a half figure of Dorothea, Lady Eden, and Mrs. Lane, several interesting works of the artist, including "Jack Hill," and "Tristram and Fox" (Dogs). Of Reynolds a very fine portrait of Mrs. Quarrington lent by Mr. Makins, Lord Rothschild's beautiful but faded "Mrs. Lloyd," Lord Normanton's "Girl with a Kitten" (Felina), and Mrs. Rumbold's portrait of Thomas Henry Rumbold, were the best examples. Romney was splendidly represented by a beautiful full-length of Isabella, Countess of Glencairn, lent by the Rev. Thomas A. Holland; by "Portraits of Two Children" a charming work belonging to Lord Thurlow; and by portraits of Mrs. Townley Ward, Lady Wright, Mrs. Horsley, and Anne, Marchioness Townshend, which belong to Mr. H. H. Gibbs, Mr. E. S. Litchfield, Mr. E. H. Palmer, and Mr. R. S. Holford, respectively.

It was to Mr. Holford that the exhibition owed most. No fewer than fifty of the pictures came from his celebrated collection. Of his many good examples of the Dutch school may be mentioned a fine "Forest Scene" by Hobbema, a splendid "View of Dort" by Cuyp, "The Rabbit Warren" by Paul Potter, a portrait of Martin Looten by Rembrandt, two interiors by Adrian Van Ostade, and a beautiful little landscape ("Coup de Soleil") by Jacob Van Ruysdael. Noticeable amongst fine works of other schools were Mr. Holford's "Portrait of a

Woman" by Lorenzo Lotts (124), an early portrait of Philip IV. and one of Don Gaspar de Guzman Conde Duque Olivarez, both by Velasquez. But the Duke of Wellington's portraits of Quevedo and Pope Innocent X were even finer examples of the great Spanish master. A well-preserved example of an artist whose work is not often seen in England, was Mr. Holford's "Holy Family" by Gaudenzio Ferrari. From the Queen's collection at Buckingham Palace came Teniers' "Alchymist," an "Adoration of the Magi" by Rembrandt, and "Pan and Syrinx" by Rubens, splendid in colour. The Duke of Wellington lent (in addition to the pictures by Velasquez) Claude's famous "Embarkation of St. Paula," two very fine Wouvermans, and "The Agony in the Garden" by Correggio. Of the Marquis of Bath's contributions, a lovely little "Holy Family" by Titian was the finest; and Mr. Charles Butler sent a number of pictures of the early Italian schools of more interest than beauty. Among other works which deserve mention were Mr. Orrock's fine "Classical Landscape" by Wilson, Mr. Henson's portraits of Peg Woffington and Miss Ray, Mr. Sellar's examples of Rubens and Frank Hals, Lord Heytesbury's "Gallegas" by Murillo, and "Mater Dolorosa" by Juannes, Lord Leconfield's portrait of Murillo by himself, and Mr. Keiller's "Dell in Helmingham Park," a magnificent specimen of Constable's later manner, Colonel Sterling's cartoon of the "Virgin and Child" by Raphael, and his altarpiece by Cola dell' Amatrice. A very naïve and pretty "Virgin and Child surrounded by Angels" (Flemish) lent by Mr. Benson, Mrs. Oman's "Virgin and Child" by Francia, Mr. H. Willett's examples of Matteo da Siena, and two portions of a predella by Andrea del Sarto, lent by the National Gallery of Ireland, may be added to the list.

The collection of over 150 paintings and drawings by Van Dyck at the Grosvenor Gallery, though containing several inferior and doubtful pictures, was a glorious testimony to his genius, and a revelation of the wealth of England in superb examples of the master. It contained several fine specimens of his peerless Genoese period, among which were "The Children of the Balbi Family," "The Marchesa Balbi," and finest of all perhaps, a magnificent portrait of an unknown lady (No. 6 in the catalogue). Mr. Holford is the possessor of the last two, and Lord Cowper of the first. The Duke of Norfolk sent his celebrated portrait of "Charles the First," and the famous groups of "Three Children of Charles the First," and "Sir

William Killigrew and Thomas Carew"-were lent by the Queen. The Marquis of Bristol sent his well-known portrait of the artist with the sunflower, the side by side bust portraits of "Charles the First and Henrietta Maria," and also a portrait of "Prince Rupert." It is impossible here to give an adequate notion of the splendour of the gathering, but Mr. Holford's "Abbe Scaglia," Earl Brownlow's "Lady and Child," and the Duke of Cleveland's "Snyders and his Wife," were finest examples of his second Flemish manner, and Sir Philip Egerton "Strafford," Lord Cowper's "Lord John and Lord Bernard Stuart," Lord Spencer's "Dædalus and Icarus," the Duke of Newcastle's "Rinaldo and Armida," and the Earl of Warwick's "Marchesa de Brignole-Sala and her Son," all belong to the highest order of the master's work. The Dukes of Devonshire and Grafton, Earl Spencer, the Earls of Northbrook and Warwick, and Messrs. Holford and J. P. Heseltine were among those who contributed the greatest numbers of Van Dycks.

At the Institute of Painters in Oil Colours there was, as usual, a very large and miscellaneous collection, but it contained little of much interest. Mr. E. J. Gregory's great technical skill was shown in a girl's head, called "Kept in," Mr. J. Reid's genius for colour in a picture of "The Angler," and another of "The Thames—Evening." Mr. Walter Severn's "Waves breaking against a Sea Wall" was remarkable for its force and truth, and Mr. Aumonier sent a charming picture of "Haymaking," full of light and air and fresh sweet colour. Mr. E. A. Waterlow, Mr. F. Cotman, and many other artists might be mentioned with praise in connection with this gathering, but they will appear again when we consider the later exhibitions, to which they sent more important work. As in previous exhibitions of this Institute, it derived a great deal of its best and most interesting work from the members of the Institute of Painters in Water Colours, and it is a matter for regret that more of the members of the Royal Academy have not joined this Institute, and that those who have done so do not give this winter exhibition of oil paintings more vigorous assistance.

Opinions were strangely divided in regard to the two principal exhibitions of the year—the Royal Academy and the Grosvenor Gallery. Some held that it was a very good Grosvenor and a very bad Academy, and others expressed exactly opposite views. Our own view is that the Royal Academy was distinctly superior to most of those of recent years, at least in average

merit, and that the Grosvenor, while showing some falling-off in what have hitherto been regarded as its special features, was by no means a "bad" one.

If there were such a thing as a "first prize" at the Academy, it must have fallen this year, as last, to Mr. Orchardson, whose "The First Cloud" showed no diminution of those qualities of style, colour, and dramatic power which raise him to the front rank among modern painters. The composition was simple. In the hands of anyone but the painter that large room with its expanse of shining *parqueterie* and its two standing figures, would have looked empty. He with his back to the fireplace on the right, she in the middle, with her back turned, pausing a moment before passing under the heavy curtain into the ante-room, fill the whole apartment with tragic feeling. Though called "The First Cloud," one feels that it is the commencement of division irremediable. In every line of the man's figure and face is written "Never yield;" in the hand of the woman you can read "Never forgive." Yet, as in all this painter's scenes of domestic tragedy in high life, the passion is felt rather than expressed; no violence of grimace or extravagance of gesture, only terrible forces pent up in swelling throat and closed hand. The greatest art, like the greatest acting is suggestive. Mr. Orchardson had also a portrait here of "Mrs. Joseph," which in colour was unequalled, and in character scarcely excelled by any other. As at the Grosvenor, so here, Sir John Millais was not "himself at a';" his portraits of the Marquis of Hartington and Lord Rosebery were poor; his large composition of "Mercy—St. Bartholomew's Day, 1572," a dead failure. A pretty young mother holding up a child in her arms to look at "The Nest," which gave the title to the picture, was his best contribution. Sir Frederick Leighton, despite two refined exercises of his skill and imagination, did not achieve a great success. They were too obviously exercises, these finely-drawn figures of Hero looking for her Leander, and Simœtha brooding vengeance on her lover. The President also exhibited his design for the reverse of the Jubilee Medallion, executed for the Government, a work characterised by elegance in the individual figures and ingenuity in construction.

It is but dull and useless work to chronicle from year to year the works of some of the Academicians. We know too well what to expect from Mr. Sidney Cooper and Mr. Herbert, Mr. Wells, and Mr. Frith. This year the works of the last two

painters were more interesting than usual, for there was some humour in Mr. Frith's "Sir Roger de Coverley and the Beautiful Widow," and Mr. Wells sent a replica or reminiscence of an earlier work, representing the Queen receiving the news of the death of William IV. Of Mr. Armitage's unselfish labours in the cause of noble art, and of the time when great expectations were rightly entertained of his picture fame, a noble reminder was present in his monumental composition of "The Institution of the Franciscan Order," painted to replace the fresco of the same subject, executed in 1859, at St. John's Catholic Church, Duncan Terrace, Islington. Mr. Vicat Cole, Mr. Calderon, Mr. Watts, and Mr. Poynter were absent, and of the rest of the Academicians the only one who sent anything unexpected was Mr. Yeames, whose large picture of St. Christopher, called "The Christ-bearer," was original and poetical. But of some painters we ask no more than that they give us what we expect. We want no more of Mr. Davis than his finely-painted sheep and cattle in their green pastures. Mr. Hook may paint us his sunny shores and dancing waves for ever, and Mr. Peter Graham his spray-dashed cliffs and vaporous clouds; let Mr. Stacey Marks go on painting his quaint birds and quainter men, and we shall be satisfied; for all these are true masters in their own lines, and these lines are wide enough to admit of endlessly pleasing variety within them. All these artists were fairly represented, but of their work, and of that of the remaining Academicians (except Mr. Alma Tadema and the portrait painters, Mr. Ouless and Mr. Holl), there was little to need notice here. But we forget; Mr. Luke Fildes is now an Academician, and his portrait of his wife, fine in style and splendidly painted, was one of the most memorable pictures at Burlington House. Mr. Marcus Stone, the other R.A. elect, sent one of his dainty girlish figures in large hat and loose light robe. Mr. Alma Tadema chose for his subject "The Women of Amphissa bringing food to the weary Thyades." So spotless and fresh were the Bacchantes lying here and there in all positions on the marble floor of the temple, that one could scarcely accept the picture as an earnest endeavour to represent a historic incident, but taking merely the theme as one fitted to display the artist's power in painting light, and flesh, and texture, the choice was excellent. Never perhaps has this accomplished artist shown so great a sense of divers types of female beauty; never has he painted flesh and marble more exquisitely, or filled his scene

more perfectly with light. The composition was scattered, but it was a picture to be remembered, not only in connection with the Exhibitions of 1887, but as ranking among the masterpieces of the painter.

It is only because we trust that he will do much greater and more thoroughly successful work that we hope Mr. John Sargent's extraordinary picture called "Carnation, Lily, Lily, Rose," will not hereafter be reckoned among his masterpieces; but yet it was perhaps that by which the Royal Academy Exhibition of 1887 will be best remembered by art students. It was not the best picture by any means, but it was the most curious. Two finely-drawn girls' faces, illuminated by the yellow-red light of Chinese lanterns, in the midst of a wilderness of carnations, lilies, and other flowers in a twilight. There was neither beginning nor end to it—not a picture in the sense of a composition, but a scene of gorgeous and fantastic confusion. One could not even account for the illumination of it; the light was not dim enough in the garden for the lanterns to appear so bright. Semi-pictorial, semi-decorative, a luxurious and somewhat weird mixture of light and colour, without obvious sentiment, but withal impressive, this serious caprice had an indefinite, unaccountable charm. We are glad that the Academy had the courage to buy this work for the Chantrey gallery, for though better pictures might have been had for the money, it is unusually representative of British art at this time, when many of the most gifted of our younger artists are seeking for "something new." It was, at all events, a much better purchase than Mr. Prinsep's "Ayesha," an Indian girl, with a huge copper vessel in her hand. This picture had, however, one merit, not by any means generally possessed by pictures purchased with Chantrey's money—it was a favourable specimen of the artist's power.

Another memorable picture, by one of the most earnest, original, and accomplished of our younger artists, was Mr. S. J. Solomon's "Samson (betrayed by Delilah)." At all events, here was serious and strenuous work, and the artist has done his best to realise the tremendous struggle on a scale of heroic dimensions. Samson was, even without his hair, no easy capture. He is striving with might and main, in the toil of ropes, with which some half-dozen men have entangled him. With bent backs and tense muscles they tug and pant—they and he a huge confused bundle of frantic limbs and trunks. At the

side stands Delilah, a dark-skinned Asiatic, young and lithe, waving Samson's hair in her hand, her eyes glittering the while with mockery of her deceived lover, and eager enjoyment of her treachery. This figure of Delilah has been the subject of special and well-deserved praise for its force and originality. Like his Cassandra last year, and many other pictures not so noticeable or noticed, this picture of "Samson" marks Mr. Solomon out as an artist of exceptional gifts, and it is to be hoped that he will use them in exciting us with visions of more noble struggles, and fill us with finer emotions than this tumultuous scene of fraud and force can possibly do.

The place of honour in the great gallery was awarded to Mr. J. W. Waterhouse's large and very effective picture of "Marianne." The composition, with its grand white marble steps and grim gold lion, and the tall sad figure of strange beauty descending to her death, is very striking, but the other figures are somewhat sacrificed to give isolation to the victim of Salome's hatred. On the whole, subjects of a heroical and imaginative class were sufficiently numerous and good to show that the main direction of modern art towards recording actual sights with or without subjective feeling, is not likely to become universal. Among the pictures the subjects (at least) of which were of pure fancy, were the Hon. John Collier's "An Incantation," a clever, if not a very agreeable representation of a handsome witch, with her naked form vividly illuminated by the fire beneath her cauldron, and, less forcibly realised, but of a tenderer grace, were two refined figures by Henrietta Rae (Mrs. E. Normand), "Eurydice sinking back into Hades," and "A Naiad." A beautiful woman, beautifully painted and beautifully dressed, standing on a terrace in an Italian garden, holding an apple in her hand, and called "Hesperia," was Mr. Frank Dicksee's charming contribution to the poetry of the Academy; and many were glad to see Mr. Arthur Hughes, in his beautiful picture of a sleeping shepherdess, called "In the Forest of Arden," recall the time when his exquisitely-tender fancy, refined colour, and delicate execution struck a note of loveliness unreached by any other of the Pre-Raphaelite school.

Of works of *genre*, sentimental, humorous, historic, domestic, English and foreign, ancient and modern, the Academy had its usual number. Mr. Seymour Lucas's scene from an 18th century coffee-house ("The Latest Scandal"); Mr. John White, with his rosy-faced rustic children playing at school ("Dame Nature's

School" was the title of the picture); Mr. Fred Hall, with his very small old woman plucking a very large goose, described as "Old Birds;" Mr. Dendy Sadlers' last century sportsmen drinking in an inn parlour, labelled "The Old Squire and the Young Squire;" Mr. Burgess's "Making Cigarettes at Seville;" Mr. Henry Tuke's "A Sailor's Yarn," remarkable for its broad execution and fine colour, were a few only of the pictures of this kind which brightened the Exhibition. Mr. Dollman's "Your Humble Servant," a highwayman bowing to the gallows; Mr. Arthur North's "All Fours," Mr. Hindley's "Music Lesson," Mr. Joseph Clarke's "Orphans" and even Mr. W. F. Calderon's pathetic picture of John Hampden riding mortally wounded from the field of Chalgrove, though very different in feeling, must all be named here for commendation together. Many also were subjects of the idyllic class, in which landscape and figures combined in producing an undivided sentiment. There was Mr. Colin Hunter's "Their Share of the Toil," in which the fish spread out on the beach echoed the opalescent hues of the shimmering sea, and Mr. Boughton's Orkney maidens "Dancing Down the Hay;" there was Mr. Hemy's "Smelt-net," and Mr. F. Morgan's haymaking lovers ("The Favourite Swain"); but there was nothing of this class finer than Mr. W. H. Bartlett's "The Last Brief Voyage," in which the artist's rather cold colour seemed in sympathy with the mourners and the little coffin and the voyage of the boat, which performed the office of a hearse. To this class belonged one of the pictures bought by the Chantrey funds, a bright and clever Irish scene, called "Galway Gossips," by Mr. E. A. Waterlow.

Little can be said here of the portraits and the landscapes, although it was in them that the real strength of the Exhibition lay. Mr. Herkomer's portrait of a lady in black, un-named in the catalogue, but described there by the verses,

> "Entranced in some Diviner mood
> Of self-oblivious solitude;"

attracted more attention than any other. The face was of no common beauty, the figure graceful and full of natural nobility, and the execution masterly. In colour also (and this is not often the case with Mr. Herkomer) the picture was a perfect success, but the colour was very sober, being restricted mainly to blacks and browns, which set off the charming tints of her admirably painted flesh. Less pleasant but powerful was his portrait of Mr. Briton Rivière. Mr. Ouless's portraits of the Lord Mayor,

Lord John Manners, and Sir Horace Jones, and Mr. Holl's of Mr. W. S. Gilbert, the Baron de Worms, and Sir George Trevelyan (the last a real masterpiece), were among the finest things in the Exhibition. The most astonishing as a *tour de force* was Mr. J. Sargent's very unpleasant portrait of Mrs. William Playfair, and the presence of three brilliant portraits by his master, M. Carolus Duran, showed how much of his style, his dash, and his curious taste in colour is derived from over the water. A more sober but not less admirable piece of portraiture was sent by M. Fautin, whose even yet-increasing skill in the painting of flowers and fruits was also exhibited on the walls of the Academy. Mr. William Carter, here as at the Grosvenor, claimed admission to the front rank of portrait painters, and there were other good works of this class sent by Mr. Seymour Lucas, Mr. Hermann Herkomer, Mr. W. B. Richmond, Mr. Sant, Mr. Shannon, Miss Emmeline Deane, and others. Of Mr. Orchardson's portrait of Mrs. Joseph we have already spoken.

In landscape, as we have said, the strength of the Academy greatly lay, but there is nothing so difficult to describe as landscape, especially in few words. Moreover there was no landscape superlatively great, only almost continuous evidence throughout the rooms that numerous intelligences were at work sincerely, intelligently, and skilfully, and many of them with fine insight and feeling, endeavouring to realise the charm and penetrate the spirit of different aspects of nature. The only artist of remarkable skill who appears to look upon nature without the faintest emotion, is Mr. John Brett. Two huge instances of his vivid laborious workmanship were here. The rest in various ways paint their "impressions." Though in colour it leaves much to be desired, the complete freshness and the beautiful design of Mr. Alfred Parsons' "When Nature Painted All Things Gay," count far to justify its purchase out of the Chantrey bequest. Of Mr. Hook, Mr. Peter Graham, and Mr. W. B. Davis, we have already spoken, and some other of the older favourites, as the late Mr. Oakes, Mr. Leader, and Mr. Alfred Hunt, were well represented, and of the future of landscape art in England, those might well be hopeful who looked at the pictures of Messrs. Alfred East, Leslie Thomson, Sydney Morrish, Percy Belgrave, Peter Buchanan, Frank Dean, Frank Walton, Aubrey Hunt, James Grace, Mark Fisher, Arthur Lemon, W. Fahey, A. Picknell, Adrian Stokes, David Murray, A. Helcke, Sherwood Calvert, Allan Hook, Clayton Adams, and Ernest Parton, D. and

J. Farquharson, a long but by no means exhaustive list of able landscape painters, most of them no doubt of no great genius, but all fresh and individual, and the majority gifted with fine perception and fine feeling.

In glancing over our account of the paintings in the Academy, we find many omissions hard to rectify. Of Mr. Henry Moore's grand sea-piece, the finest he ever painted, and one of the finest anybody ever painted, we have said nothing, and Mr. Briton Rivière, Mr. M. Loudan, Mr. E. J. Gregory, Mr. E. Blair Leighton, Mr. Stanhope Forbes, Mr. Logsdail, and many more have doubtless been treated with comparative injustice, but this can scarcely be avoided in a summary account of so large an Exhibition.

In sculpture, the most prominent works were: Mr. Henry Armstead's fine statue of "Ladas, the Spartan Runner, Dying at his Goal," and Mr. George H. Saul's figure of "Aristodemus in his Madness," which was vigorous and well imagined; Mr. Hamo Thornycroft's model of the "Memorial of General Gordon," to be placed in Trafalgar Square; Mr. Onslow Ford's statuette of "Peace;" Mr. Lawson's bronze statue of "Summer;" Mr. Roscoe Mullins' "Conquerors," an old favourite reproduced in bronze; Mr. Harry Bates' reliefs from the story of Psyche, and Mr. Boehm's "Young Bull and Herdsman." Other works by Mr. A. Gilbert (now we are glad to say an Associate), Mr. Walter Ingram, Mr. Mark Rogers, jun., Mrs. Emma Guild, Mr. Henry Gunthorp, Mr. Frederick Pomeroy, Miss Rose Le Quesne, Mr. Samuel Fox, Miss Louisa Jacobs, Mr. Robert Stark, Mr. Arthur Walker, and Mr. Thomas Brock, showed that the sculpture, if less striking in achievement than in recent years, yet maintained a fairly-high level.

The first word about the Grosvenor is always due to Mr. Burne Jones. The artist and the Gallery owe much to one another. At the same time the Royal Academy *did* elect Mr. Burne Jones an Associate *last* year, and it was a natural subject for remark that *this* year the artist did not choose to send a single picture to Burlington House. In Bond Street he was represented by five works, a decorative piece of painted plaster, the principal feature of which was a finely-modelled peacock, and four pictures. The most important of the latter was a strange conception of "The Garden of Pan." Pan, a little brown low-browed man of the woods, perched upon a rock, and piping timidly; the garden, a wide expanse of hilly ground, partly wooded with trees,

strange in shape and colour, and peopled only with two nude lovers seated in close contact, and a kingfisher, whose brilliant plumage was scarcely in keeping with the unnatural sallow key in which the rest of the picture was painted. Pan himself was so different from the ordinary conception of the god, and his garden was so unlike man's ordinary experience of nature, that the appreciation of this picture was difficult to the vulgar, and it was only to a still more narrow circle that the artist's "Baleful Head" could prove attractive. The subject was Perseus showing Andromeda the head of the Gorgon reflected in a marble font.

In this work the natural world, though a little more agreeable than in the "Garden of Pan," has even less air; the composition is artificial in the extreme, and the figures affected to the last degree. It was in his beautiful portrait of his daughter that he showed his true genius in a manner most to be understood. In a blue dress, with the back of her pretty head reflected in a convex mirror, and her face sweet, pure, and spiritual, gazing from the picture, the figure arrested the spectator, and held him charmed. And the picture of a young girl at full length on a sofa reading a book was pleasant, but less remarkable. Mr. C. W. Mitchell, who made a brilliant *debût* with his picture of "Hypatia," two years ago, sent a large composition, in which the body of one of the saints that rose appears to her father and mother after the Resurrection. This ambitious work, though clever in its execution, was conceived in a common-place spirit and could not be considered a success. Another, comparatively, failure was "The Runaway," a large picture by a clever young artist named La Thangue. It represented a coarse country girl in a pink dress, discovered sleeping heavily among high and coarse grass or rushes. Cleverly but sketchily painted, there was nothing in the subject or the execution to justify the scale of treatment. The exhibition contained a good many other large pictures hung in more conspicuous situations than they deserved, but in a summary like the present it is not worth while to call special attention to them. It is more pleasant to mention such noble imaginative work as Mr. Watts's "Judgment of Paris," a radiant vision of the three goddesses, a little infirm in handling, but charming in line, and trembling with opalescent colour. There was no picture of this class which could be compared with this grand effort of the veteran painter; but Mr. G. D. Richmond's was a brave and ingenious attempt to represent "Icarus,"

and Mr. Arthur Hacker, in a scene (from Hypatia) of Philammon watching the body of Pelagia, attracted a good deal of attention. The strength of this exhibition, even more than that of the Academy, was, however, in portrait and landscape. Perhaps the finest portrait was that of the Earl of Pembroke, by Mr. W. B. Richmond, who showed his refined taste aad beautiful draughtsmanship in several other portraits, notably in one called "La Fiammetta," a work of singular charm, and beautiful in colour. Mr. Holl and Mr. Herkomer were also strongly represented, the former by portraits of Lord Harlech, Mr. Alexander Binnie, and Archdeacon Hornby; the latter by portraits of Canon Wilberforce, the late Professor Fawcett, and Mr. Frank Baxter. The Hon. John Collier's likeness of Mr. Toole was good, and his "Mrs. Horne" was altogether charming. A singularly-dashing and elegant portrait of "A Queen of Hearts," by Mr. J. Shannon, added to the rising reputation of this painter, and Mr. William Carter also distinguished himself by his lifelike and finely-painted portraits of Sir Richard Brooke and Mrs. C. A. Fyffe.

In landscape and marine pictures the exhibition was rich. With the exception of those in his grand picture at the Royal Academy, Mr. Henry Moore has never painted a finer sea or a finer sky than those in "Morning, Gonce Bay, the Coast of France in the Distance." Mr. Mark Fisher was also seen at his best in his "Evening—November," a work alike beautiful in design and colour, and painted with rare mastery. Mr. Alfred Parsons' "Going Westward," was remarked for the fineness of its composition; and Mr. Arthur Lemon showed his usual skill in painting horses, and also his true poetic sentiment in a picture called "Evening." Mr. Alfred Hunt's "Rose-red Village in the Twilight Time," was a charming rendering of a subject in which the artist delights; and Mr. J. W. North's "Upland Watermeadow—Somerset. Morning," was full of space and air, of subtle gradations in tone, perfect in harmony of colour, and luminous throughout. Mr. Napier Hemy's vigorous figures and green waters; Mr. Fahey's "Sea Fog Blowing over Oulton Broad," and other landscapes by Signor Costa and Messrs. Corbett, E. Benson, Bartlett, E. Barclay, J. Reid, E. Parton, Hennessy, Allan, Helcké, and others, showed the life and variety of the modern English school of landscape.

We have now mentioned all, or nearly all of the most remarkable pictures of an exhibition to which several well-known artists like Sir John Millais, Mr. Holman Hunt, and Mr. Albert

Moore, sent contributions which did not add to their reputation. As usual, there were a number of good and pretty small pictures, most of which must be passed over here. Mr. Poynter and Mr. G. Leslie were fairly represented in this way, and Mr. Boughton's "Old Cronies" was delightful. Mr. Philip Burne Jones had a remarkable picture, called "The Shadows of the Saint;" the saint being Stylites, and the shadows being that of himself on his pillar cast by moonlight across a mediæval street. The sculpture was unimportant, and mostly portrait, but there was some refined work by Messrs. Onslow Ford, Harry Bates, Roscoe Mullins, and others.

The usual exhibitions of the Water-colour Societies were not marked by any works of an extraordinary character. At the Winter Collection of the Royal Society Mr. Albert Goodwin showed some beautful drawings of Switzerland. Mr. Henry Moore left the sea for "Buttercups and Daisies," and Mr. Herbert Marshall abandoned London for Dort and Rotterdam, and Mr. Matthew Hale, Miss Clara Montalba, Mr. Carl Haag, and many others of the members showed their well-known hands. The Spring Exhibition of this Society was only remarkable for a cartoon of Mr. Holman Hunt of "Christ among the Doctors," for striking studies of London, by Mr. Herbert Marshall, and of the East, by Mr. Charles Robertson. Mr. Alfred Hunt sent several charming landscapes. At the Royal Institute no artist showed greater progress than Mr. F. Cotman, who sent several beautiful drawings of mills and churches in Norfolk, and Mr. Weedon made special mark by the luminous quality and rich colour of his "Moorland Road, Ross-shire." In spite of fine works by Sir J. D. Linton, Mr. Kilburne, Mr. H. B. Steer, Mr. E. Bale, and a few others, the figure subjects were not quite equal in interest to what we have reason to expect of the Society, and Mr. Tom Collier, their finest landscape painter, sent only one, and that not a first-rate example of his powers; but Mr. H. G. Hine and Mr. Harry Hine, with Messrs. Wimperls and Orrock, both of whom have progressed much, Mr. Frank Walton, Mr. Alfred East, Mr. Fulleylove, and a dozen others, well-known and capable artists, brought up the landscape section to its usual high level.

The Exhibitions of the Society of British Artists have been transformed under Mr. Whistler into comparatively small and interesting shows. One is always sure at least to see some examples of the President's eccentric genius, and specimens of

the work of such able and sincere artists as Mr. Mortimer Menpes, Mr. W. Stott (of Oldham), Mr. Ayerst Ingram, Mr. Gotch, Mr. Symonds, and Mr. Edwin Ellis. The rooms in Suffolk Street may now be considered as the home of Mr. Whistler, his friends and allies, who seem to share, to a great extent, the views and aims of that new Society to which we called attention last year. This Society (the New English Art Club) held their second Exhibition at the Dudley Gallery, but though it contained some striking works by Mr. Sargent, Mr. Tuke, and others, it was scarcely so interesting as its predecessor, and did not seem to promise any distinct development of art. At the same gallery was held an excellent exhibition by the lady artists and the fourth "Black and White" Exhibition.

The minor exhibitions of the year were as numerous and interesting as usual. At Mr. Wallis's (The French) Gallery they were held in winter and spring, and were distinguished by fine examples of Muller, Heffner, and Seiler, Ronbaud and Heilbuth. Messrs. Tooth and Messrs. Maclean held also two exhibitions each, where many well-known English and foreign masters were well represented. To these must be added Messrs. Obach's in Cockspur Street, and the Hanover Gallery, at both of which places a number of fine pictures ancient and modern, foreign and English, have been exhibited during the year. At Messrs. Graves in Pall Mall was held a large exhibition of Sir Oswald Brierley's pictures, and the Nineteenth Century Art Society had two exhibitions of which the less said the better. At Messrs. Goupil and Co. the shows were more numerous; a good miscellaneous collection of foreign pictures; an exhibition by the Société d'Aquarellistes Français, a selection of fine pictures from the Salon, were perhaps the most important of them. At Messrs. Dowdeswell's, Mr. Sutton Palmer in his views of the English lakes showed increased power, Mr. Walter May exhibited the charming result of a pictorial trip to Madeira, and Sir J. D. Linton and Mr. Orrock combined, the one with a fine series of landscapes of the Border Country, the other by a splendidly painted series of single figures from the novels of Sir Walter Scott, to do honour to the Wizard of the North. At the Fine Art Society a perfect succession of small exhibitions have been held, all of which were interesting and successful. Each of them was devoted to a single artist. Among them were Mr. McWhirter's pictures, &c., illustrating the "Land of Burns and

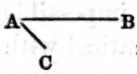
Scott," M. Roussoff's drawings of Venice, Mr. Fahey's of the Norfolk Broads, Mrs. Allingham's dainty water-colours of cottage gardens and sandy lanes, with their charming figures so skilfully introduced, Mr. Henry Moore's brilliant pictures and drawings of sea and land, Mr. Bridgman's vivid sketches of eastern life, and Mr. Du Maurier's drawings for Punch. Messrs. Agnew exhibited Munkacsy's "Death of Mozart," and a collection of water-colours by deceased and living artists chosen with their usual care. It included specimens of Turner, Copley Fielding, Rossetti, Burne Jones, Frederick Walker, and Alma Tadema. At Mr. Mendoza's there was an interesting exhibition of works in black and white. Lastly, we must not forget Mr. Harry Furniss's "Royal Academy" in Bond Street, a collection of very clever caricatures or pictorial parodies of the pictures of Academicians and Associates. Many of these were extremely amusing, and the illustrated catalogue was perhaps more amusing still.

COSMO MONKHOUSE.

SCIENCE OF THE YEAR 1886–1887.

Astronomy.

Comets of 1886–87.—Among the comets which have been detected since the autumn of 1886, two only seem worthy of special mention.

One is the comet discovered on October 4th, 1886, by Barnard. At its brightest it was visible to the naked eye. In the telescope it was remarkable for the curious inequality of the side streamers from the head, one of them stretching out into a long and nearly straight tail, the other slanting off at an angle of about 45°, and so short as to give the whole comet a hooked appearance thus, 

, where A is the head, AB the long side streamer, and AC the short one.

The other is the great southern comet of January, 1887. This object, which should rather perhaps be called the long than the great comet, was remarkable for the entire absence of any definite condensation at the place where, in a normal comet, the head should have been. In this respect it resembled the comet of 1880. The comets of 1843 and 1882 were also remarkable for the great length of their tails, and the comparative smallness and faintness of their heads. In each case there was a head, but it was inconspicuous,—and in the case of the best observed of the two, the comet of 1882, the head manifested a singular instability, breaking up into several nuclei. One could understand that in the course of a few more circuits round the sun the comets of 1843 and 1882 would be made, by the sun's action on the matter of their heads, to assume the headless appearance of the comets of 1880 and 1887. Attention is called to these points, because the comets of 1843, 1880, and 1882, though certainly not the same as the comet of last January,—no two of them in fact being identifiable as in reality one—are as manifestly associated with it, with each other, and with the comet of 1668. All these five comets travel on what may be regarded as practically the same path around the sun,—or rather on paths so closely resembling each other that we must regard them as in all probability originally one.

It may be remembered that some excitement was occasioned

when, in 1882, a comet was discovered which, as at first observed, seemed to be travelling on a path closely resembling the paths traversed by the comets of 1843 and 1880. It was supposed that the comet of 1843 had returned in 1880, and that owing to resistance in passing the neighbourhood of the sun, its orbital range had then been reduced, so that it had completed its next circuit in two-and-a-half years. This was the natural interpretation of the close resemblance between the paths pursued by all these bodies; and it cannot be regarded as an error of judgment that Professor P. Smyth, Astronomer Royal for Scotland, Mr. Hind, superintendent of the "Nautical Almanac," and others (including the writer) adopted at first this which seemed the most probable interpretation. We were, however, mistaken. It was soon found that the comet of 1882 was passing away in such sort as to show that it would not return till several centuries have passed. Though it was impossible after this to suppose that the comet of 1882 was identical with those of 1880 or 1843, and though this discovery threw serious doubts on what had before seemed possible, namely, that these last two comets were one and the same, yet it was impossible to explain as merely casual the singular resemblance of these three comets' paths in the sun's neighbourhood. The writer threw out at that time the suggestion that these comets and the comet of 1668 are connected much as the two comets into which Biela's Comet divided in 1846 were (for a while) connected; in other words, that these comets had originally been parts of a single large comet, which long since—probably hundreds of thousands of years ago—had been broken up by solar action into several distinct comets. In the course of ages the several comets thus formed would be found travelling at widely different portions of the long ellipse which had been the original track of the main body. (The heads of the two comets into which Biela's broke up were 250,000 miles apart when they were passing out of view in 1846, and five times that distance apart when next they returned into view—in 1852—the last time they were ever seen.) The present writer threw out further the suggestion that probably there were more of these bodies still to come.

It would seem that the comet of last January belongs to this family. It traversed the same path in the sun's neighbourhood, a path remarkable for its eccentricity and for the singularly near approach made at perihelion to the sun's surface. So close is this approach that the comet's head actually sweeps the region

of the sun's coloured flames when in perihelion. So rapid is the comet's motion near perihelion that it passes from one side of the sun to the opposite side (that is, sweeps round two right angles, one on either side of its perihelion) in less than two *hours!* That five comets, those of 1668, 1843, 1880, 1882, and 1887, should traverse this absolutely unique path, and yet be in no way connected, may be regarded as practically impossible. Since it is also impossible to regard these five comets as one, there seems to be no escape from the conclusion that they, and probably others yet to follow, are all members of the same comet family.

New Red Star.—The recognition of a new red star is not in itself so remarkable as to need special notice. But a red star discovered by Mr. Espin, of the Liverpool Astronomical Society, merits attention on account of its spectrum, which instead of being that of the fourth order, hitherto observed in the case of every small red star, is of the third order, observed till now only in the case of orange-yellow stars, such as Antares, Alpha Herculis, β-Pegasi, &c. The red star presenting this peculiarity is of the 7th magnitude, and will be found 5 sec. following and 3′ south of 26 Cygni.

The Draper Memorial.—Professor Pickering has published the first report of the work or rather of the experiments conducted in pursuance of the plan provided for by Mrs. H. Draper. The instruments to be used are an 8-inch Voigtländer photographic lens, Dr. Draper's 11-inch photographic lens, his 15-inch refractor, his 28-inch reflector, and a 15-inch mirror (that with which Dr. Draper took his fine photographs of the moon). The work which Professor Pickering hopes to accomplish satisfactorily with these instruments includes—

1. A catalogue of spectra of bright stars.
2. A catalogue of spectra of faint stars.
3. A detailed study of the spectra of the brighter stars.
4. Faint stellar spectra.
5. Absorption spectra.
6. Wave-lengths.

Professor Pickering considers that the photographic apparatus will probably be sufficiently delicate to determine the stellar motions of approach and recession with a high degree of precision.

The Lick Observatory.—This observatory, which will not only have the most powerful refracting-telescope yet made, but be

situated higher above the sea-level than any large observatory in existence, is approaching completion. Whether important discoveries will be achieved with it remains to be seen. Unfortunately the trustees have set over men like Burnham and others, of well-known skill in observation, one who chiefly distinguished himself when in command of the splendid Washington refractor by discovering a purely imaginary third moon for Mars. Perhaps, however, Professor Holden will make no such discoveries with the great Lick telescope.

The Supposed Double Canals of Mars.—Considerable attention has recently been given to Signor Schiaparelli's supposed discovery of double canals in Mars, or rather of the doubling of canals which had been single. MM. Perrotin, Trépied, Thollon, and Gautier, believe that they have recognised these doubled canals, while Green, Knobel, and other observers deny that the doubled canals have any objective existence. The mere fact that our earth presents nothing analogous to these supposed sets of parallel canals, is not a sufficient reason for rejecting Schiaparelli's observations; for other planets may present features unlike those recognised in our earth; yet all who have recognised the uniformity which characterises the variety of nature, will be disposed to question on *à priori* grounds evidence which if accepted would indicate a phenomenon so abnormal, almost grotesque, as the existence on Mars of a sort of network of immense canals, germinated after the quaint fashion shown in Schiaparelli's pictures. A strong *à posteriori* objection is derived from the fact that the most powerful telescopes fail to show these germinated canals, while Schiaparelli, Perrotin, and the rest have seen the canals less distinctly when Mars has been in opposition and most favourably placed for observation than when the planet has been near his "stations" and quadratures. I venture to express my own belief, amounting almost to conviction, that the doubling of the canals is merely an optical phenomenon, due probably to diffraction. I believe the so-called canals are really rivers, which at the distance of Mars would appear almost indefinitely delicate could they be seen as they are; but diffraction would convert these practically linear marks into streaks of considerable breadth, precisely as it alters the image of a star into a disc. The breadth of the streak, like the diameter of the star disc, would be so much the greater as the aperture of the telescope was smaller; and so much the more marked in relation to the disc of Mars as the planet was farther

off. So far as can be judged from the accounts of observers who have seen the "doubled canals," the appearance corresponds to what might be expected if at the time the rivers on Mars were bright on a dark ground, and not (as usual, probably) dark on a lighter ground.

Meteorite in Coal.—Late in 1886, Dr. Gurlt described at a meeting of geologists at Bonn a fossil meteorite, found in a block of tertiary coal, and now in the Salzburg Museum. In form it was almost a cube, two of the opposite faces being rounded, and the four others reduced by these roundings. The faces of a deep incision which runs all round the cube bear such characteristic traces of meteoric iron as to preclude the idea that the mass is the work of man. The iron is covered with a thin layer of oxide; it is as hard as steel, and it contains, besides carbon, a small quantity of nickel. The fall of this meteorite must be set at fully a million years ago.

Star-Charting by Photography.—The application of photography to star-charting has been developed notably during the past year, though MM. Paul and Prosper Henry still remain the only astronomers who have been successful in obtaining satisfactory pictures. A Congress of official astronomers met at Paris in response to the invitation of the Director of the Paris Observatory, and plans were arranged for photographing the whole of the star sphere to about the telescopic range corresponding to stars of the 13th or 14th magnitude, or mapping photographically some 50 millions of stars.

This estimate is considerably in excess of that which has been usually given—viz., 30 millions—for stars down to the 14th magnitude inclusive. But I believe it to be more correct. The charts of Argelander show about 300,000 stars north of the equator; and the magnitude reached by his telescope was but about midway between the 9th and 10th; besides that even of stars of greater magnitude many are omitted especially in the richer regions, as the writer knows from test observations of his own. Unquestionably there are not fewer than a million stars to the 10th magnitude in the northern and southern heavens together. According to the observed rate of increase in numbers per magnitude—the only means we have for even guessing at the probable numbers for magnitudes as yet uncounted—the number of stars to the 11th magnitude would be about 3,000,000; to the 12th about 9,000,000; to the 13th about 27,000,000; and to the 14th about 81,000,000. Probably the number is considerably

greater even than the 50,000,000 of our estimate. It need hardly be said that no observations made in the usual way, even though a sufficient number of astronomers joined in the work, and worked long enough, could be compared in value with photographic charts presenting without bias or chance of error the star fields as they actually are.

Physics.

Photographing Colours.—In the spring of 1887 it was announced in many newspapers that a method had been devised for taking photographs in colours. No such method had been invented, or probably ever will be. What has really been discovered has been a system for producing colours by photographic process. The artistic aspect of the methods devised for photographing in colours need not be considered in this place. These methods, however, have great scientific interest,—first, because of the scientific considerations they involve and, secondly, because of the scientific applications which will probably be found for them hereafter. Mr. Mayall, of London, and Mr. Carey Lea, of Philadelphia, have been working independently towards the production of colour by photographic processes, and in many respects their experiments and discoveries are akin. It has been shown that when light acts on ordinary silver chloride in presence of hydrochloric acid, a small quantity of subchloride combines with unchanged silver chloride to form a crimson-red (or lake) compound. This is the red protochloride, and remains unattacked by nitric acid. On obtaining protochlorides, bromides, and iodides of this nature, Mr. Mayall found that all varieties of tint from one end of the spectrum to the other could be produced under suitable conditions. When protochloride of silver, naturally red, is exposed to diffused sunlight it becomes purple. When mercuric acid is added a grey tint results; with potassium iodide, a bluish tint; with potassium bromide, lilac; with a mixture of potassium chlorate and hydrochloric acid, rose tints result, passing through various gradations of flesh tints to pure white. Heat restores to the compound its red tint; but the important discovery in this connection is that on exposure to various parts of the spectrum the compound assumes various delicate tints. It has further been observed that white light which darkens the pure protochloride, turns it white in the presence of small quantities of lead or zinc chloride, thus making

those parts of the image white which are white by nature. The addition of a little salicylate enhances the sensitiveness of the compound in this respect.

The student of science cannot fail to recognise the extreme importance of these discoveries when considered with reference to what they promise for physical science. It may never be possible to reproduce by photography all the multitudinous hues which appear in a landscape, since we have there not only spectral tints, that is the primary and secondary colours—but tertiary, quarternary, quinary, and still more complex combinations of colour; and it may be doubted whether chemistry will ever discover a compound which will respond, as it were, to all these varied hues. But in the application of photography to scientific researches, the power of reproducing the spectral tints alone would be of extreme importance. Even though it should not be found possible to discover a compound which would reproduce all these tints simultaneously, according to the colour of the light forming different parts of the image, yet the reproduction (or indication) of the more marked tints would be of great value in astronomical, chemical, and physical researches,—to mention no more. Such photographs, for example, as MM. Paul and Prosper Henry have made of the planets, and promise to make of the moon, would be enhanced immensely in value if by any means the tints of the various parts of these orbs could be indicated—even though perhaps half a dozen separate photographs might be necessary to show the relative strength of the spectral colours over different regions.

Isochromatic Photography.—Mr. Ives, of Philadelphia, by washing his plates with a solution of chlorophyll, in addition to the ordinary preparation, obtains pictures in which all colours and tones of colour are shown with their true depths of light and shade.

New Kinds of Glass for Lenses.—Late in 1866, Professor Abbé, of Jena, announced the discovery of new kinds of glass especially adapted for the production of lenses. He had been employed, since 1881, with Dr. Schott in investigations directed to the improvement of lenses intended for delicate microscopical work. A great number of experiments were made, and many kinds of glass tested, from ordinary glass to Faraday's "heavy glass." The first point aimed at was the production of flint and crown glass which should produce spectra having nearly proportional dispersion, so that when a suitably-selected pair—flint and crown—

were used together, the resulting combination should be as nearly as possible achromatic. The second point was the production of a greater number of gradations in glasses, as respects their refractive power and their mean dispersive power. Of course, the essential principle of compound glasses is that one of the lenses shall exactly correct the mean dispersion produced by the other, while leaving an outstanding balance of refractive power bringing rays which pass through the lens to a focus. The greater the dispersive action of the flint glass as compared with its refractive power, the shorter is the focal length (*cæteris paribus*) when the mean dispersion produced by the crown glass lens has been corrected. If this proportion were the same for all the spectral colours, the compound glass would be absolutely free from colour-effects; but as the mean dispersion only is fully corrected, there remains some colour. What Professor Abbé has chiefly aimed at has been to discover a combination which while correcting the mean dispersion absolutely, as every compound object-glass should, leaves as little outstanding or secondary colouring as possible. As in some of his combinations he has succeeded not only in correcting the greater part of the secondary colouring, but even in bringing the foci for the visible rays and for the actinic rays (the blue, indigo, and violet parts of the spectrum) into practical coincidence, we must consider his success, at least with small object-glasses, highly promising. Whether anything of the same sort can be done for large telescopic object-glasses remains to be seen; if it could astronomers would be relieved of a serious difficulty.

Electric Safety-Lamps.—Although the Davy light, properly used, ensures safety to the miner, the illumination it affords when in its wire-gauze enclosure is so poor that the miner is often tempted to open it, which has been the occasion of many of the most disastrous colliery explosions of recent times. On three of the bodies brought up from the Udston mine, tools were found which could be used for opening the Davy safety-lamp. Hence we cannot but hail with satisfaction the promised use of the electric light in coal mines. Mr. Swan of Newcastle has planned one which gives a light ranging from two to twelve Clanny lamps, and is absolutely safe. Another invention may here be mentioned. The glass enclosing the glowing carbon of an electric safety-lamp is of course sufficient to prevent all possibility of explosion unless by some accident it should be broken. A Yorkshire clergyman has devised a plan for surrounding the

carbon of an incandescent lamp with wire-gauze, so that should such an accident happen the glowing carbon is prevented from igniting any combustible mixture of gas or coal-dust surrounding it. A lamp thus constructed would combine the safety of the electric light with that of the Davy lamp, with this further advantage, that the miner would be unable to get at the wire-gauze without first breaking the glass. But a better method has been invented by Mr. Miles Settle, Managing Director of the Madeley Coal and Iron Company, North Staffordshire. In his arrangement the air-tight globe containing the incandescent light floats in water contained within an outer globe; if the latter is broken the connection with the electric current is at once interrupted, and the light goes out instantly.

Developing the Telephone.—The telephone may be regarded as a vocal instrument, since it conveys sounds; we make it as it were do distant speaking for us. On the other hand, the microphone is, in a sense, a hearing instrument, since it receives sounds; we make it as it were help us to hear. The combination of the two instruments seems a natural sequel to the separate invention of each. This has been effected by Herr Hempel of Dresden, who has devised a combination of the telephone and microphone; the sounds transmitted by the former being so expanded by the latter that the words uttered in a moderate tone of voice by the distant speaker can be heard at the receiving station all over a fair-sized room. In fact, if the receiver has his ear at the ear-piece the speaker must either stand several yards from the mouth-piece or scarcely raise his voice above a whisper, or the receiver will be half deafened by the seemingly stentorian tones which reach him. This instrument has been tried at Dresden and Berlin for the transmission of music with highly satisfactory results.

We may hope that instruments of this kind, suitably modified, may be hereafter used not only for conveying spoken messages over distances far greater than have yet been attempted, but for the study of many phenomena of great scientific interest. The power of speaking across (or rather through) an ocean like the Atlantic may be a possibility of the future. Students of seismic phenomena, for example, have used the microphone successfully to indicate the progress of earth tremors close at hand. But it may be possible hereafter for the noise and jar of terrestrial shocks to be conveyed to observers situate hundreds of miles from the scene of disturbance. If science is ever to learn

the laws of earthquakes and volcanic disturbances, or to acquire the power of predicting them (were it but for a day or two in advance) it must be by the use of some such contrivance, by which not only the occurrence of deep-seated disturbances could be announced, but the locality of the perturbed region indicated.

Cold as a Cause of Railway Accidents.—By a series of experiments in America it has been shown that although railway accidents are more frequent in cold than in warm weather, this is not due to any diminution of the strength of iron rails or of iron wheels in cold weather, but partly to the rigidity of the ground when frozen and partly to the displacement of the rails by the action of frost. Methods are suggested for removing or diminishing both sources of danger.

Greatest Cold yet attained in Physical Experiments.—The lowest temperature obtained by M. Wroblewski by allowing liquefied hydrogen to escape is −211° C., or about −380° Fahr. At this temperature all known substances—elementary or compound—are solidified. Neither gases nor liquids exist. The metals appear also to lose at this temperature their power of resisting the passage of the electric current, which passes through them without developing heat.

Coal Tar Colours.—Sir Henry Roscoe has recently called attention to the growing value of the coal tar industry. To illustrate the amount of colouring-power residing in coal he presents tables showing that one pound of coal affords magenta enough to colour 500 yards of flannel; aurine enough for 120 yards of flannel, 27 inches wide; vermilion scarlet for 2560 yards of flannel, or alizarine for 255 yards of Turkey-red cloth. Among the derivatives from coal tar there are about 16 different yellows, 12 orange tints, 33 reds, 15 blues, 7 greens, 9 violets, and a number of browns and blacks; besides mixtures giving rise to an almost infinite variety of shades and tones of colour.

Melenite.—The invention of this new explosive must be noticed, though the sole use suggested for the substance thus far has been for warlike purposes, and discreditable to civilised communities. It is claimed that melenite is more destructive than gun-cotton, nitro-glycerine, or panclastite. It seems, however, to expose those who use it for warlike purposes to almost as much danger as their enemies.

The "Dead Space" in Chemical Reactions.—Professor Liebreich has observed that when chlorate of chloral is mixed with

an alkaline solution enclosed in a test-glass, the uppermost layer remains free from turbidity, or other sign of the progress of the usual reaction. He calls this upper layer the "dead space." It is bounded on the upper side by the meniscus of the fluid, and on the lower side by a sharp boundary, having apparently a curve opposed to that of the meniscus. In the capillary space between two glass plates, the dead space was beautifully displayed. In horizontal capillary tubes the dead space could be seen at both ends. He proved by repeated experiments that the portion of fluid in which no reaction took place contained both the chlorate of chloral and the alkaline solution; showing that the chemical reaction had been hindered in some way which remains to be determined. Professor Liebreich believes that the surface tension resists or rather prevents the progress of chemical reaction. The discovery promises to throw light on certain interesting problems of molecular physics.

Temperature in the Mines of Lake Superior.—From observations made by Mr. H. A. Wheeler on the temperature of the copper mines of Keweenaw Point, Lake Superior, which are among the deepest mines of the United States, it appears that the gradient (or rate of increase of heat for given increase of depth) is far less than the average. For whereas the usual thermic gradient is 1° Fahr. for about 50 or 55 feet, the average gradient for five of the Lake Superior mines corresponds only to 1° Fahr. in 99 feet. Keweenaw Point is a tapering peninsula extending some 70 miles towards the middle of the lake. Thus none of the mines are far from the water. It is found that those nearest to the lake shore have the lowest gradients. It would thus appear that the waters of Lake Superior act the part of a "great cold blanket," preventing that comparatively rapid rise of temperature within the depths to which the mines have penetrated (ranging from 617 to 1950 feet) which occurs under the usual conditions. This result, which may fairly be regarded as general, is of great importance in regard to the problem of the earth's interior. For it shows that beneath large masses of water the earth-layers of equal temperature must be thicker than elsewhere—possibly more than twice as thick as the corresponding layers in continental regions. Since nearly three-fourths of the earth's surface are occupied by water, this conclusion has an important bearing on physical problems relating to the earth's figure, and changes of figure, under the strains and pressures to which she is subjected through the varying attractions of the sun and moon. The result recog-

nised by Mr. Wheeler corresponds with what had been anticipated by physicists who had dealt with these difficult problems; but no such satisfactory evidence had yet been obtained as these lake mines have supplied.

Geographical.

Great Earthquake in America.—The disturbance which affected the eastern half of the United States on the 31st August was remarkable for its wide range and the long continuance of the movements which followed the chief shock.

At about the time when the disturbances which had affected Greece had completed their work—on August 27th—ominous earth-tremblings were noticed at Summerville, South Carolina, about 25 miles north-west from Charleston—a spot which proved eventually to be the centre of the region affected by the great earthquake. These minor disturbances continued, with greater or less activity, until the evening of the 31st, when at 9° 54′ (75th east meridional time) a veritable earthquake shock was experienced, followed after five minutes by another, and that after ten minutes by a third. By these shocks three-fifths of the houses and buildings in Charleston were shaken to the ground (the damage being afterwards estimated at 10,000,000 dollars). The loss of life was not so great as might have been feared from so great a destruction of property. Forty were killed and about 200 injured. As the gasworks were destroyed Charleston was plunged into total darkness, first dissipated by fires which burst forth in five several parts of the city. The scene was fearful, even for those of strongest mind and most resolute character. The negroes were absolutely overwhelmed by the horror of the scene, the innate savagery of the race showing in itself the most marked way under the influence of abject terror.

Eruptions of sand and mud took place between Charleston and Summerville, the traces of which remained in the form of small oval craters, ranging from 25 feet in length by 15 wide to tiny craterlets only an inch or so in diameter. The largest of these craters was not more than half a foot in depth.

The area of disturbance ranged from Summerville and Charleston to the Atlantic on the east, to the lake region on the north, to Missouri, Arkansas, and Louisiana on the west, and to the northern shores of the Gulf of Mexico on the south. If certain irregularities observed in the geyser region of the

Yellowstone Park are to be connected with the great earthquake, as seems probable, we must assign to the disturbance a very much greater extension towards the north-west. The chief geyser, which had been inactive for the preceding four years, entered into violent action on the 27th of August, projecting columns of water at times to a height of 300 feet.

Great Earthquake in the North-West of Italy.—The Italian earthquake of February 23rd, sometimes called the Earthquake of Nice, had for its real centre a part of the shore of the Gulf of Genoa near Diano Marina. At Nice, Mentone, and Savona the effects of the earthquake were terrible; but Diano Marina was destroyed, and Bussana, Castellaro, Pompiana, and Oneglia fared almost as ill. The most destructive shock was experienced at 6 h. 22 m. in the morning (Roman time). About three hours before there had been a slight shock. The great shock, or rather series of shocks, lasted about one minute, and was accompanied by a loud subterranean noise. Another shock, scarcely less destructive, was experienced about two-and-a-half hours later. About a thousand lives were lost, and an immense amount of property was destroyed in the towns named above.

The region over which this earthquake's effects were noticed was much less extended than that affected by the earthquake in America, though the later disturbance was much more destructive. Northwards the earth's movements extended to Basle, westwards to Clermont-Ferrand and the Eastern Pyrenees; southwards to the north of Sardinia; and eastwards to Florence. The range thus indicated is that over which the shock was more or less distinctly felt. Signs of its influence were noticed further from the centre of disturbance, but only through indications of seismographs. That the effects of the earthquake should have been noticed at Basle is remarkable, because usually a massive mountain range proves an obstacle beyond which earth movements are not readily transmitted. Here the Alpine range had not prevented the movement from passing northwards.

Magnetic Effects of the North Italian Earthquake.—The magnetic instruments at Geneva oscillated in a manner indicative of intense disturbance 1½ minute after the principal shock; those of Paris 3½ minutes after the shock; 3 minutes later the magnetic disturbance reached London; 2 minutes later Wilhelmshafen in Germany; those of Lisbon 2 minutes later still, or 10 (more exactly 10½) minutes after the principal shock. This indicates a rate of propagation of about 1½ mile per second.

Washington was not reached till 7 h. 9 m. had passed, the mean rate at which the magnetic disturbance had been propagated being about one-third (more exactly 0·14) of a mile per second.

Earthquakes in Ecuador and the Middle States of North America.—It may seem strange to speak of disturbances in Ecuador and Missouri as if they could be by any possibility connected. But it is noteworthy that there seemed to be a marked connection between the earthquakes of 1811–12 in Venezuela and the West Indies on one side, and from South Carolina to as far north as New Madrid, Missouri, on the other. Sir Charles Lyell appeared to recognise a distinct alternation of effects in these widely-separated regions. The slight disturbances which took place in the beginning of August in the Middle States of North America extending over the very region affected in 1812, followed so soon after the disturbances in Ecuador, as to suggest the possibility that the same far-extending earthquake regions were disturbed which showed signs of simultaneous activity in 1811–12.

Great Inland Depression of Brazil.—Mr. J. W. Wells has directed attention to the great depression which extends through the centre of the South American Continent. A canoe can be navigated from the Rio Orinoco to the Rio Negro, thence to the Amazons, then up to the Rios Madeira, Mamoré, Guaporé, and Alegré, where, notwithstanding the great distance traversed from the sea, it will not be more than 500 or 600 feet above the sea-level. It can then be hauled across a low grassy flat to the Rio Agoapehy, and thence it can descend by the Rios Jauru and Paraguay to Buenos Ayres. The distance from the Amazons to the Plate by this route is about 2,500 miles, of which 1,650 have been already traversed by steamers. The remaining 850 miles present serious obstacles. Yet probably this route will hereafter become the main line of internal communication. By far the greater portion of the lands along this natural way are as undeveloped as the Congo of Africa. A connection also exists between the Rio San Pramixo and the Rio Tocantins. A canoe can leave the last-named river and go up the Rios Grande, Preto, and Sapão. The source of the Sapão is a lake in a valley surrounded by table-topped hills. On the west the lake drains out into a quick-flowing considerable stream, the Rio Diego, which joins the Rio Preto, and thence onward there is communication by the Rio de Sonno to the Tocantins. "This journey," Mr. Wells points out, "could be made without once

taking the canoe out of the water, except to descend with safety a few rough stretches on the western outlet of the lake."

A little-known African Region.—The Rev. D. Asante, a native missionary of the Basle Gold Coast Mission, has recently visited during a journey of exploration the hill country of Booso, where there is a cool temperature and plenty of rain. The inhabitants are less pleasant than the region in which they dwell. They are subject to goitre, extremely dirty, and averse to the use of clothing. The most marked feature of their religious observances is their frequent resort to the ordeal by poison. In some cases a whole village will take the poisonous infusion on whose discriminating powers they rely. The same test is used in quarrels. Little children who cry much are made to swallow the infusion, on the chance that in one way or another they may be quieted ; and parents who have lost many children in succession take the poison in order to determine the cause of their affliction, if, indeed, in Booso Land the death of a child is regarded as an affliction. Strange to say, despite these precautions, the country is very thinly peopled.

Disappearance of one of the Faroes.—The rock-island Munken (south of Sumbö), formerly one of the most prominent landmarks of the Faroes, has been washed away. It had stood 70 feet above the sea-level. It fell in, according to the report of the Danish Minister of Marine, in May, 1885 ; and since then the rest of the rock has been washed away piece by piece until now the tide flows over the whole surface.

Drying up of Asiatic Lakes.—It is announced in the Proceedings of the Russian Geographical Society that some of the great lakes of the Aral Caspian region are drying up. Those lying between Omsk and Tomsk, and between the Aral and the Obi are drying rapidly. Lake Chani, the largest of a group of four, the others being Soomioi, Abychkan, and Moloki, has diminished considerably. Lake Moloki, the smallest of the group, has lost three-fourths of its dimensions during the present century, and villages now occupy parts of its former bed. But Lake Abychkan has undergone the greatest change of all, having been reduced from an area of 530 square miles to three ponds, the largest of which is scarcely 1½ mile wide. In a map made in 1784, Lake Tchbakly was shown as an oval 40 miles long by 30 wide ; now three ponds only remain. It is suggested that probably the region occupied by these lakes was once an inland sea resembling the Aral or the Caspian.

A Great Ice Cavern in Lower Austria.—An immense ice cavern has been discovered on the southern slope of the Dachstein or Schneeborg, a lofty mountain visible from the lower ramparts of Vienna. The cavern which runs from north to south has been explored a distance of about 2,000 feet. It is nearly 20 feet wide, and the ice appears to be enormously thick. Probably exploration will disclose a subterranean lake in this cavern.

Palæontological.

New Specimens of Palæolithic Art.—M. Eugène Paignon has recently found in one of the caves along the banks of the Tardoire, in La Charente, certain most interesting specimens of the art of prehistoric man, engraved on a perforated piece of reindeer-horn, of the form known as the staff of command. On one of the faces of the staff is a representation of two seals, one of which has its four limbs very faithfully rendered, showing five digits in each of its hinder flaps. The size of the tail is somewhat exaggerated. The head is delicately executed, and the snout with its moustaches, the mouth, the eye, and the ear-orifice indicate real skill. The other seal is partly hidden. In front of the latter seal is a salmon or trout, showing the ventral fins attached to the abdomen. Two long and slender animals, probably also intended for seals, are shown on the other side of the staff. Plant-stems are shown also on one side of the staff, and a hemipterous insect on the other. This interesting specimen was found in M. Paignon's presence by his own workmen while digging out the bone-earth from the bottom of the cave.

Post-Glacial Forest in Hull.—In working a brickyard on the western outskirts of Hull, in a place over which the tide has not flowed within historic times, a forest-bed has been found (12 or 13 feet below the surface of the clean clay), on the irregular surface of the drift. A foot below the drift, which consists of greenish sand-clay with pebbles and stones, is another bed of red clay about 8 feet thick, with pebble stones and fragments of chalk ; and below this a thin layer of quicksand. The roots of the trees are standing as they grew, and are so close as to indicate a dense forest. The trees were mostly oak and Scottish fir, the former generally sound, the latter decayed. The trees show that no change has taken place in the climate. Around their roots is a peat-bed formed, 2 to 4 feet thick, composed largely of trunks and fallen branches of trees ; but nuts from an

undergrowth of hazel have been found in it. On the surface of the drift at the bottom of the peat was found a polished stone axe or celt, 4 inches long, and belonging to the neolithic age.

Prehistoric Man.—Late in 1886 two human skulls were found in a cave at Spy, a few miles from Namur. These skulls are both remarkably thick, resembling the well-known Neanderthal skull in this respect, and also in the projecting eyebrows and the low sloping forehead. These characteristics seem to have belonged to the primitive race living on the banks of the Sambre. Within the cave three distinct layers of sandstone could be recognised, in which were found flints carefully dressed on one side, specimens of jaspar and agate (minerals not existing in the neighbourhood), ivory pins, necklets of pearls, and coloured ear-drops. There was clear evidence of progress in civilisation during the time of the deposition of these several layers; for the articles found in the lowest layer were decidedly inferior in workmanship to those in the middle layer, and these again to the articles found in the uppermost. It was in the lowest stratum that the skulls were found. Such evidence as this tends to correct the idea entertained by some anthropologists that the Neanderthal skull may have been exceptionally low type for the period to which it belonged. We have definite evidence of a primitive race having Simian foreheads, and in other respects of low animal type, yet capable of advancing from absolute savagery towards such degree of civilisation as is indicated by the improved workmanship of ornaments and by the introduction of new minerals from a distance. Here, as in every case where we find traces of primeval races, there has been progress not regression towards a more savage state. Among the articles found in this case there were representations of animals.

Meteorological.

Tropical and Extra-tropical Cyclones.—The Hon. Ralph Abercromby has communicated to the Royal Society an interesting paper on the differences between tropical and extra-tropical cyclones. Tropical cyclones seldom divide as extra-tropical cyclones do. On the contrary, it is not uncommon for a tropical cyclone when approaching an extra-tropical cyclone to coalesce with it. In a tropical cyclone the velocity of the wind increases inwards to near the centre, whereas in higher latitudes the

strongest winds and the steepest gradients are often at a considerable distance from the centre. In this peculiarity tropical cyclones approximate more to the type of the tornado (the characteristic distinction between the cyclone and tornado is in their mode of origin, the cyclone being due to diminution of pressure horizontally towards the centre of disturbance, while the tornado is due to diminution of pressure in a vertical direction above the centre of disturbance). Everywhere the rain accompanying a cyclone extends further in front than behind; but in extra-tropical cyclones squalls occur only in the rear and south of the region of least pressure, unless the storm is of exceptional severity, whereas in tropical cyclones they surround the centre on all sides.

Biological.

Extinction of the Beaver in Norway.—Professor Collett, of Norway, announces that but about 100 beavers remain in the southern provinces of Norway, while the animal is extinct in Northern Norway.

A New Species of Cat-fish.—Professor Heilprin has discovered a species of cat-fish in Lake Okeechobee, Florida, which differs in several respects from all the species hitherto known. In a communication to the Academy of Natural Sciences at Philadelphia he describes it as most nearly related to the cat-fish of the great lakes. He has proposed for it the pleasing name *Ictalurus Okeechobensis.*

Scarlet Fever Germs.—Dr. Klein exhibited at the Royal Society early in 1887 the gelatine cultivation of the *Micrococcus scarlatina* organism which has been shown to be present in human scarlatina, and in a certain disease of the cow.

Ancient Migrations.—MM. de Quatrefages and Chevalier have given in their adhesion to the belief, taught by the ancient records of the Aryan race, that migrations in remote antiquity were rendered compulsory by the gradual increase of cold in high latitudes.

The Negro's Dependence on the White Man.—During the earthquake at Charleston the coloured people, in their terror, showed how little their change of condition more than a score of years ago has altered their real nature, whether that nature be regarded as inherited from savage ancestry or the result of some half dozen generations of slavery since the bulk of their coloured

forefathers were stolen from their African home. During the darkness and confusion, the terrified negroes turned to a white face, we are told, "as to that of an angel." Only those who know the ways and habits of the coloured population of the United States can conceive what an utter mockery the concession of independence to the negro has been. Even for freedom they were scarcely fit; but for the franchise they will not be fit for many generations, if they ever will be. Individual exceptions only prove the rule. The negro is but a domesticated savage, differing from the wilder among his savage ancestry as the dog differs from the wolf or the fox, but still at heart essentially a savage, and as unfit (in civilised communities) for self-government as the Bedouin Arab for the social etiquette of London life.

Foreign Trees in the United States.—Professor Sargent, of Harvard College, has called attention to the fact that foreign trees, though five are planted for one native tree, fail to thrive in America. The European oak, and the Scottish, Austrian, and Corsican pines all die at about the time when they should be in their prime, and the Norway spruce, at a corresponding age, is already decrepit and unsightly. Of all foreign trees the willow alone, Professor Sargent points out, has qualities not possessed in greater degree by some native American tree.

Trees and Rainfall.—The question whether forests influence rainfall still remain undecided. In India steps have been taken to determine how far the common opinion on this point is justified by facts. From observations made in the Ajmere forests it appears that the rainfall is slightly but appreciably greater in the forests than outside their limits. But inquiries must be extended over a much wider area and continued for a much longer time before any definite conclusions can be formed.

Spectrum of a Luminous Beetle.—Herr C. Heinemann, of Vera Cruz, announces among other researches relating to the Mexican luminous beetle, the Cucuyo, that he has analysed its light with the spectroscope, and finds the spectrum to be deficient in the red, and wanting half the blue portion. He believes that a substance produced in the light organ burns on contact with the oxygen of the air, giving out light.

The Veddas of Ceylon.—Mr. Stevens of Queensland, who has recently passed six months among the Veddas of Ceylon, calls attention to the interesting phenomena presented by this fast-dying race. He found them honest and hospitable, and attri-

butes the belief that they are vindictive and suspicious to the accounts given by the Singhalese and Tamils for whom the Veddas appear to entertain a marked aversion. The Singhalese do not understand the language of the Veddas. Although the Veddas do not boil or roast their food they use the fire-drill, and know enough about the working of metals to fashion weapons. Their religion appears to consist of acts of propitiation, once yearly, to eight or nine gods. The yearly nature of the propitiation suggests that it had its origin in sun-worship, or in the worship of the host of heaven. There are not more than 500 Veddas now left in Ceylon. These are divided into eight clans, apparently determined by their traditional origin.

The Bacillus of Malaria.—Experiments of Dr. Bernardo Schiavuzzi indicate the constant presence of a *bacillus* identical with that described by Klebs in malarial districts and its absence from healthy localities. This *bacillus* can be artificially cultivated, and when a rabbit is inoculated with it a fever is developed which shows all the characteristics of swamp fever, the red corpuscles of the blood undergoing the same alterations as characterise malarial infection. Dr. Schiavuzzi, therefore, concludes that the *Bacillus Malariæ* described by Klebs is the true cause of malarial fever. Quinine appears to have a specific effect in diminishing the activity of this *bacillus*, and eventually exterminating it. Dr. George M. Sternberg notes similar results. Marchiafara and Celli have induced types of intermittent fever in previously healthy persons by injecting blood drawn from a malarial patient during the access of fever. The parasitic germ disappeared from the blood after the administration of quinine.

Consumption among American Indians.—It has recently been suggested that the prevalence of consumption among American Indians may be due to their use of clothing without the centuries of preparation by which civilised races have become habituated to the covering of large portions of the skin, and the consequent extra work thrown on the lungs. There may be something in this; but more probably the Indian suffers from his want of experience as to the proper way of using clothes. Like the Maories, among whom consumption is becoming increasingly prevalent, the Indian allows clothing which has become wet to dry upon him, and the loss of heat through the consequent evaporation tends largely to the development of pulmonary troubles.

Origin of Languages.—Mr. Hale has called attention to the

significance of certain well-known facts in regard to language-making powers in young children, on the perplexing problem of the diversities of language. He cites two cases in which children made a complete language, sufficient for all purposes of mutual intercourse, yet totally unintelligible to their parents and others about them. In one case, twin children began to talk at the usual age a language which they made for themselves. They passed days playing and talking together with all the volubility of children—their language being all that was necessary for the requirements of free communication. When they were six or seven years old they were sent to school, where after a week, during which they did not speak at all, they began to learn English, their own language being gradually forgotten. In the other case a new language was formed by a little girl four years old, and imparted to her brother, eighteen months younger. Such facts, which appear to be by no means uncommon, are full of significance.

Colour-Blindness.—From a series of inquiries made during the last five years by Dr. T. H. Bickerton of the Ophthalmic Hospital, Moorfields, it appears that from among 3087 men and boys tested, 179 failed at the first test (a very pale pure green), either by not recognising colour at all or by mistaking it for some other; of these 74 passed the remaining tests, and were regarded as having but slight colour-blindness, which might be disregarded. The remaining 105, 3·40 per cent. of the whole number, were regarded as colour-blind, and unfit for employments requiring the power of distinguishing colours. Of 1,841 women only 3 were at all affected, and only 2 of these, or 0·108 per cent., were actually colour-blind. In several cases of apparently feeble colour-perception it was found that tuition corrected the defect, showing that it was due rather to ignorance than to deficiency of perceptive power; in other cases no change was effected by tuition; and yet in others, after teaching, although the tests were fulfilled, it was with the utmost difficulty. The importance of such inquiries is shown by the circumstance that not one of the 105 colour-blind men and boys had had any suspicion of his defective perception of colour. This was the case even where such colours as red, brown, and green seemed the same: in a few instances blue and yellow also.

Link between Vertebrates and Invertebrates.—Mr. Baldwin Spencer of the University Museum, Oxford, has discovered what looks like evidence, somewhat recondite yet striking, of the

former connection between the vertebrates and invertebrates. On the pineal body and under the parietal foramen of the lizard-like reptile *Hatteria Punctata*, Mr. Spencer found a rounded mass (provided with a well-marked nerve), which is evidently a rudimentary and quite useless eye. Placed in the head of an animal well provided with the normal pair of eyes belonging to vertebrates, this atrophied organism is indicative of the ancestry of the creature in which it lingers, after being rendered devoid of function and needless during the course of ages. Now the structure of this eye is that recognised in the eye of invertebrates, being characterised by the features which are peculiar to eyes of invertebrates, and distinguish them from the eyes of the vertebrate races. The presence of an useless and atrophied invertebrate eye in this reptile thus appears to indicate an ancient connection between the vertebrates and a family of the invertebrates—probably the Tunicata or sea-squirts, a class of the Molluscoids. The evidence thus supplied in favour of the doctrine of the common origin of all forms of animal life is very striking.

RICHARD A. PROCTOR.

THE MUSIC OF THE YEAR 1886-7.

THE past season will rank as one of the most important periods in the history of English music. From every point of view our progress as a musical nation must be regarded as eminently satisfactory; our composers have shown themselves at their best, and have proved that English musicians are not merely worthy of notice, but deserving of a very high degree of admiration. Many of the works produced by them this year are, we venture to predict, destined to a fame that will scarcely fade while the English tongue endures, and the fact that all the successes of the year show a decided earnestness of aim and a high artistic ideal argues a distinct advance in public taste. The only cases of conspicuous failure were, in fact, those of works written to suit the imagined taste of the British public. One of these was a composition which was expected to be a principal attraction at the Leeds Festival of October, 1886, viz., Dvorák's oratorio on the legend of *St. Ludmila*, a work in which the composer had evidently based his style for the time being on the model of those oratorios which are most popular in England. The result was that his individuality was altogether in abeyance, excepting in some of the earlier numbers, and that as a whole the oratorio was intolerably dull. The same festival redeemed its character by bringing forward the two greatest successes of the year, Sir Arthur Sullivan's *Golden Legend*, and Mr. C. V. Stanford's *Revenge*, the first an exquisite idyll, reflecting with perfect sympathy the tenderness and simple beauty of Longfellow's well-known poem, and the second a stirring setting of Lord Tennyson's "Ballad of the Fleet." Both compositions have since become so universally known that it is unnecessary to review them in detail. Mr. A. C. Mackenzie's cantata *The Story of Sayid* though far less remarkable than these, yet contains passages of sufficient beauty and imaginative powers to warrant its being considered the best work which the composer has yet produced. The works we have mentioned were prominent in the programmes of most of the London and provincial choral societies, and *The Golden Legend* penetrated as far as Berlin, where it met with an unexpectedly cold reception, owing, no doubt, to the unanimous animosity displayed towards it by the German press. In the case of most of the London choral societies there is, as usual, little of novelty to record; on May 24, the London

Musical Society brought to a hearing one of the cantatas by Beethoven which have been lately discovered, a work of great historical interest, though bearing the inevitable traces of a *pièce d'occasion*, and the Bach Choir gave, on March 18, a large number of selections from Schumann's single opera, *Genoveva*, as well as producing at a miscellaneous concert on May 17, an important choral work, written by Mr. Hubert Parry, set to Milton's ode "Blest pair of Sirens." Though of short extent, this composition, written for eight-part chorus and orchestra, has all the sublimity which the poem demands, and may justly be held to rank high among the achievements of English music. At the same concert an excellent performance of Berlioz's enormously difficult *Te Deum* was given.

In the direction of purely instrumental music, English composers have not been idle. A stimulus was given to their efforts by the number and importance of the orchestral concerts that have been organized during the season. Besides the Richter, Philharmonic, and Crystal Palace concerts, an important series was established by Mr. Henschel during the winter, with the title of London Symphony Concerts. The prominence given to English compositions in these programmes, each of which contained some new work of native origin, was one of the most satisfactory features of the undertaking, and though all the productions were not of equal value, it must be admitted that Mr. Henschel did good service in giving so many English musicians the opportunity of hearing their compositions performed. It is not a little remarkable that nearly all the important orchestral works by English composers have been brought forward, not by English conductors, but by foreigners. It is to be hoped that these concerts will be continued year by year, and that the patronage of the public will be more amply bestowed upon them than was the case in their first season. The Crystal Palace Concerts have kept their position in spite of the financial difficulties with which they were surrounded. Unfamiliar works by the great masters have been heard, and a few novelties have been brought forward, among which we may mention a somewhat too sombre symphony by Mons. C. M. Widor, a composer who has hitherto been insufficiently recognised in England. Another symphony of foreign origin, new to English audiences though more or less well-known abroad, was given at another concert of the same series. Herr Bruckner is a composer whose works have attracted a good deal of attention in Germany, and Herr

Richter was amply justified in bringing his eighth symphony before the London public. It shows great power and skill of orchestral colouring, although the excessive influence of Wagner is somewhat to be regretted. Under the same great conductor's bâton were produced new orchestral works by Mr. Hubert Parry (a masterly symphony in F, re-modelled with great success from an earlier work), Mr. C. V. Stanford (an "Irish" symphony, in which the composer's happiest characteristics are found in combination with an extremely ingenious use of "local colour"), and Mr. Cowen (a fifth symphony of somewhat laboured construction, and showing little inspiration or spontaneity). The last-named work was written for, and first played at, a concert given by the Cambridge University Musical Society, on June 9, when a group of prominent English composers were represented by various important compositions, new and old, the new element being supplied by Mr. Cowen's symphony and a delightfully-graceful ballet suite or "serenade" by Mr. A. Goring Thomas. At the Philharmonic concerts, the programmes were of decidedly greater interest than usual, and though no novelty of any importance was brought forward, the selection of music was eminently judicious, and the mitigation in the length of the concert was an improvement for which the public should be grateful. The society has kept up its prestige in the way of giving engagements to all the most prominent soloists who visit England, and this year it gave the public another opportunity of hearing Mme. Schumann play her husband's immortal concerto. The only appearance of that admirable violinist, Herr Leopold Auer, was made at another of the concerts. It is somewhat extraordinary that in the same set of programmes in which such names as these, and others of great renown, appear, there should be recorded the performance of a child whose precocity is certainly wonderful, but whose playing as yet shows no such qualities as would justify his appearance at concerts like those of the Philharmonic. Josef Hofmann, whose tenth birthday took place during his tour in England, is an exceedingly clever boy, who has learnt to play the pianoforte with a skill and certainty that are rarely acquired by performers of twice his age. But beyond this he does not at present go, and it would be a misuse of words to call him a prodigy. Very possibly in time to come he may rise to the position of a real artist, but his real advancement will not be assisted by the disastrous system of forcing to which he appears to be at present

subjected. A player of high attainment, though with curious limitations, appeared in Herr Schönberger, who on various occasions during the season showed that of all the composers who have written for the piano, Beethoven alone is out of his comprehension. Apart from this, his romantic interpretations of various compositions and the great charm of his tone, make him a distinct acquisition to the ranks of the young pianists.

In the department of chamber music, the Popular Concerts have kept their position, and have celebrated the thousandth of their number; as usual the public desire for the most familiar masterpieces has been more than satisfied, while the claims of living composers have been inadequately recognised. With the exception of a vigorous and skilfully-written quintet for pianoforte and strings, by Mr. Stanford, no novelty worth mentioning was produced. It was not until after the conclusion of the series that three new works in this class by Brahms were published. A trio for pianoforte and strings, and two sonatas for piano with violin and violoncello respectively, formed the chief attractions of Mr. Hallé's recitals and of several smaller concerts, as for instance, the excellent series given by Mme. Frickenhaus and Mr. Ludwig. The violoncello sonata was played first by Herr Hausmann and Mr. Max Pauer, at a joint recital given on April 6. All these compositions are masterly in construction and interesting in a very high degree, as everything written by the greatest of living composers must be; if the palm must be accorded to one of them, it will be generally given to the violin sonata, a work which for grace and charm has seldom been surpassed by any composer.

That a large quantity of music should be produced by the various Jubilee celebrations was of course a foregone conclusion, but it was hardly to be expected that so small a proportion of the work composed should have had any place in the actual service held in Westminster Abbey on June 21. An anthem written for the occasion by Dr. Bridge was in fact the only piece of music of the kind, and in its composition the writer had evidently been so hampered by an imagined obligation to include a version of the late Prince Consort's hymn-tune "Gotha," that the anthem can scarcely be expected to rank high among his works. A setting of Lord Tennyson's "Carmen sæculare," by Mr. Stanford, was performed at a State concert, but beyond the fact that it is written for soprano solo, chorus, and orchestra, nothing concerning its merit can be asserted. A setting of

Psalm cl, by the same composer and for the same executants, was a prominent feature of the opening of the Manchester Exhibition. It is exceedingly spirited aud effective, and thoroughly in keeping with the occasion for which it was intended. Mr. Mackenzie's "Jubilee Ode" was performed at the Crystal Palace, on June 22, with all the necessary pomp and circumstance which it requires. The use of cannon as a musical material is an innovation which will, it is to be hoped, not be soon followed. It might be excused if the work contained any great originality or beauty, but unfortunately this is not the case.

The dearth of operatic undertakings last year produced this season a corresponding plenty. No less than five schemes for attracting the patronage of the public to opera were started, and some reached a successful conclusion. In the winter of 1886 a French company gave some very creditable performances at Her Majesty's Theatre. Though relying principally upon such works as *La Grande Duchesse* and *Les Cloches de Corneville*, operas of a higher class were occasionally given, among which the most interesting was *Carmen*, with Mme. Galli-Marié in the part originally created by her, although the presentment of the whole opera was lamentably deficient. In the early spring the campaign of Italian opera was opened at Covent Garden. Trusting to popular prices, and the attempt to abolish the ruinous "star system," Colonel Mapleson secured at least an artistic success; and the production of so interesting a work as Bizet's *Pêcheurs de Perles*, under the title of *Leila*, was enough to raise his season above the average of such undertakings. The work referred to is of course far inferior to *Carmen*, but this fact should not suffice to keep it unheard, and many numbers are exceedingly beautiful. Mlle. Föhstrom's impersonation of the heroine was thoroughly artistic. Mr. Carl Rosa's season at Drury Lane began before the end of the first Italian series. The enterprising champion of English opera organized a splendid performance of *Lohengrin*, with Madame Roze and Mr. Scovel in the leading parts, but otherwise made no perilous venture into the world of novelty, adhering steadfastly to well-established favourites, with one exception, that of an original opera by Mr. Corder. *Nordisa*, as the work is called, comes from the pen of a composer who has always upheld the highest interests of his art against the meretricious and sordid views which are all too common amongst us. It was not a little astonishing, therefore, to find him in this

work, produced first at Liverpool on January 26, not only no trace of a high artistic aim, but many indications of the composer having deliberately written down to his public instead of writing as the subject inspired him. The result is, as might have been expected, that the groundlings, whose ears the composer has endeavoured to catch, consider the work dull, and that musicians deplore the bad taste of one from whom better things were expected. There is only one composer who has succeeded in writing below his proper level, and that is Sir Arthur Sullivan, from whose *Ruddigore* great things were looked for, especially after the extraordinary power displayed in *The Golden Legend*. Unfortunately the public expectations were not fulfilled, and it was soon found that *The Mikado* had been succeeded by an extremely wearisome production, in which the librettist and the composer had apparently outdone each other in silliness of plot and weakness of musical invention. A single song in each of the two long acts bears traces of humour and spontaneity, but these are not enough to ensure lasting popularity, although it would seem that any production at the Savoy Theatre must succeed for a time. That the monopoly of comic operas which has continued so long is about to cease may be considered certain, and such signs as the enduring success of Mr. Cellier's *Dorothy*, and the revival of his *Sultan of Mocha*, indicate that a change has already begun. In the height of the season, Italian operas came upon us in such abundance that pecuniary success was almost impossible for any of the adventurous managers whose faith in the public attachment to this class of amusement is unshaken by all the vicissitudes through which they have passed. Signor Lago succeeded the company we have mentioned at Covent Garden, and carried through a season of some interest on the old system. Madame Albani appeared in several favourite parts, and lent her assistance to the only novelty produced, Glinka's famous opera *La Vie pour le Czar*, which, strange to say, had never seen the light in England, though it has kept the boards in Russia and Germany ever since its production, no less than fifty years ago. It was to be regretted that the necessary excisions from the work were not more judiciously made. As it was, the most famous number in the whole score, a lovely song for the boy, Wania, which would have suited Mdlle. Scalchi to perfection, was omitted, together with the whole of the final act in which it occurs. Apart from this, the performance was satisfactory. Mlle.

Emma Nevada's brilliant impersonation of "Mireille" in Gounod's opera of that name, was on the whole the most satisfactory feature of the season, which included a repetition of last year's successful production of *Un Ballo in Maschera* and other works. At the opening of this series of operas, Colonel Mapleson moved his company to Her Majesty's Theatre, but, returning to the "star" system in the endeavour to secure success, found himself worsted in a difference with Madame Patti, and his season reached an abrupt conclusion. By this time the Italian undertaking entered into by Mr. Harris at Drury Lane was left alone in the field, and a real success was achieved. The position adopted by the most adroit of managers was calculated to produce the desired result. A splendid company, not merely one consisting of soprano singers, was found, and attention was paid, not to novelty, but to the production of works in their entirety, and in accordance with the composer's intentions. *Les Huguenots* was given with its last act, and *Faust* was for the first time in England furnished with its beautiful ballet music. An excellent performance of *Don Giovanni* took place, and other popular operas were given. Mlle. Nordica, and the De Reszke Brothers, were the chief attractions. One of the latter, M. Edouard de Reszke, was for years a favourite at Covent Garden, but his brother Jean, an excellent tenor, had not previously been heard. The extraordinarily successful *début* of Mlle. Sigrid Arnoldson, in the *Barbiere*, must also be chronicled. Some hopes were at one time held out that Verdi's *Otello*, a work concerning which all Europe was astir at the time of its production at Milan early in the year, might have found its way to England, but it was not to be. The Italian master has made a further advance in the direction of true dramatic music, a direction exactly opposite to that in which his earlier steps were turned, and has produced a work which is universally allowed to be a masterpiece of a most interesting kind. Before we leave the discussion of the year's dramatic music, mention must be made of the very promising performance of *Der Freischütz*, given on June 27th at the Savoy Theatre, by pupils of the Royal College of Music, an institution which is evidently bearing good fruit in many directions, as was proved by the way in which the music was sung and played. Mr. C. H. Lloyd's choruses and incidental music in *Alcestis*, written for the production of the Greek play at Oxford, added an important item to the list of this clever composer's works. Though slight in

construction, and laid out for an altogether insufficient number of instruments, it is full of beauty and originality, and was by far the most successful part of the performance.

In the direction of musical science and literature, the proceedings of the Musical Association show perhaps less important results than usual. The list of papers read includes *The Double Bass*, by Mr. A. C. White, *On Certain Novel Aspects of Harmony*, by Mr. Eustace J. Breakspeare, and *The Musical Form of the Hymn-tune*, by Mr. J. S. Curwen. Besides these there were no discussions of lasting interest. The publication of a new part of Sir George Grove's dictionary, reaching the end of the alphabet, is an event of much interest, partly owing to the enormously long periods that are now generally allowed to intervene between the issue of the successive numbers. Herr Spitta's excellent article on Weber is perhaps the most valuable, as it is certainly the longest contribution to the final part, which will be followed by a copious appendix, and an index to the whole work.

Concerning the festivals of the autumn, it must be briefly recorded that the Worcester Festival, held on September 6–9, brought out one novelty, Mr. Cowen's oratorio "Ruth," a work which it is to be feared will not add to the composer's reputation; and that at the Norwich Festival, held on October 11–14th, two Italian novelties were given prominent places, in the shape of Signor Bottesini's oratorio "The Garden of Olivet," and another work of large extent, "Isaiah," by Signor Mancinelli, whose excellent conducting was a principal cause of the success of the Drury Lane opera. The first of these is melodious and more or less attractive, though no particular originality or power is displayed, and though much of the music is cast in too operatic a mould; the second is interesting in the highest degree, being thoroughly original and full of dramatic power and intensity, as well as musical beauty. It is one of the most prominent works that the new Italian school has yet produced.

The obituary record for England is happily not very large this year. It includes the names of Dr. Chipp, for nearly twenty years the organist of Ely Cathedral, who died at Nice on December 17, 1886; Mr. Edward Hecht, who had been for many years one of Mr. Hallé's ablest coadjutors at Manchester, and had held a high position there and elsewhere as a composer or teacher, March 7, 1887; the Rev. J. P. Knight, the composer of the well-known song "She wore a wreath of

roses," June 1, at Yarmouth; Mr. J. B. Welch, an excellent teacher of singing; July 1, Mr. E. H. Lindsay Sloper, the well-known pianoforte teacher, July 3; Mr. W. H. Husk, the eminent musical antiquary, for many years secretary to the Sacred Harmonic Society, August 20. Abroad the list is also a small one, comprising the names of Karl Wehli, or Wehle, the pianist, January 25; Gaetano Fraschini, the famous tenor, May 24; Adolf Schimon, composer of several operas, better known as the husband of Mlle. Anna Regan, June 21; the famous French conductor, Jules Étienne Pasdeloup, August 13; and Maurice Strakosch, the well-known impresario, October 9.

J. A. Fuller Maitland.

SPORT IN 1887.

THE increasing popularity of football is shown by the numbers of onlookers at any of the great matches of the season; the game seems to be no longer confined to the winter, as in former days, for it is the fashion with some of the northern clubs to begin at the close of August.

At the annual general meeting of the Football Association held in April, 1887, a new scheme of rules for the governing of the Association was adopted. Under these rules the Association is governed by a council of six officers, ten representatives of divisions, and representatives from affiliated associations having fifty or more clubs under their jurisdiction. In *county* association matches, the qualifications required shall be those defined by the Football Association; in *district* association matches, the qualification shall be birth, residence, business or professional occupation within the district—the limits of each district to be defined by the council. A player may only represent one county or one district association in the same season, and must be a *bonâ fide* member of a club belonging to the county or association for which he plays. Any member of a club receiving consideration of any sort above his necessary hotel and travelling expenses, shall be considered to be a professional. Players competing for any money prizes in football contests, shall be considered professionals. Some regulations also refer to the qualifications of professionals. The council shall have power to reinstate as an amateur any professional player, and, if they think fit, to forbid any association or club belonging to the Association to play matches with any other association or club. No club or player shall compete in any football competition the proceeds of which are not devoted to a football club, or an affiliated football association, unless approved of by this or an affiliated association.

From these rules it will be seen that an attempt has been made to give a definition of the word "professional."

The football festival which was so successful at Kennington Oval in 1886, was repeated last year, the proceeds being devoted to the Imperial Institute. Two matches were played; one between Middlesex and Lancashire under the Rugby rules, in which Lancashire, after a very exciting game, was victorious by a try to nothing; the other, between the Corinthians and Preston

North End under Association rules, which was drawn, the play being much interfered with by the wind.

In the Association match between England and Scotland played at Blackburn on March 19th, under very disadvantageous circumstances owing to the state of the ground from frost and thaw, Scotland proved victorious, after an exciting game, by three goals to two.

In the final match of the competition for the London Charity Challenge Cup, the Swifts, proved victorious over the Casuals, after a somewhat uninteresting game, winning by three goals to nil.

The final for the Association Challenge Cup was played on April 2nd before a large concourse of people, who saw some very fast play between the Aston Villa and West Bromwich Albion. For the first half hour the Albions forced the play, and made matters look serious for their opponents, but after an exciting match the Aston Villa were declared winners by two goals to none. They deserved their victory. They are an excellent Midland County Club, but had never previously shown sufficient "form" to make themselves considered likely winners of the Challenge Cup. The West Bromwich Albion had the misfortune to be beaten in the final in 1886 by the Blackburn Rovers, who, till the past year, had won the cup for three years in succession.

The attempt of the Bradford Football Club (which had fallen out with its County Committee) to convert judges of the High Court into supreme referees was very properly, in the opinion of all true lovers of sport, quashed by Mr. Justice Day and Mr. Justice Wills, who said that, "in the interests of manly sport" the dispute should be left to the County Committee.

The Cricket Season of 1887 was remarkable, owing to the long-continued spell of dry weather, for the numerous individual scores of over 100. In county matches there were 45 such scores of 100 and upwards, of which Shrewsbury claimed 6, W. G. Grace 5, and Ulyett 4, and numerous scores just short of the century were made. The greatest number of runs scored by any one in inter-county matches fell to the lot of Mr. W. G. Grace, who reached the total of 1,405, Shrewsbury following with 1,388, Ulyett with 1,122, and Mr. W. W. Read with 1,032. 40,987 runs were scored for 1,875 wickets, which gives an average of 21·85 runs per wicket. Up to the very close, it was a matter of doubt whether Lancashire or Surrey would have the better record; but, much to the delight of the admirers of the latter county, their percentage of wins proved to be the higher. The

comparative merits of the contending elevens has been judged by a fresh system. The county which has suffered the fewest defeats no longer stands at the head, but the palm is awarded to the one which has scored the greatest percentage of wins. Surrey showed persistently good cricket throughout the season, their fielding being on nearly every occasion a model of what fielding should be, and, that they only lost two matches, notwithstanding their misfortune in losing both Messrs. Roller and Jones for the greater part of the season, shows what a formidable team they are; in Bowley and Lohmann they have two excellent bowlers, and Mr. W. Read and Mr. Key batted well throughout the season, though during the month of August the former did not show quite such good form.

Nottingham, who for the last three years had headed the list of counties, was twice beaten by Surrey, and had to give up her premier position.

Besides the two bowlers already mentioned, Watson and Briggs for Lancashire, and Attewell for Notts, were most successful, and it is to the success of their bowlers that Lancashire owe their position in the list below.

	Won.	Lost.	Drawn.	Total.	Percentage of wins.
Surrey	12	2	2	16	81
Lancashire ...	10	3	1	14	75
Notts	8	3	3	14	67
Middlesex ...	4	2	4	10	60
Yorkshire ...	6	3	7	16	59
Sussex	2	8	2	12	25
Kent	1	8	5	14	25
Gloucestershire..	1	9	4	14	21
Derbyshire ...	0	6	0	6	—

It will be seen by this table that Derbyshire was even more unfortunate during the past year than in 1886, when they managed to make a draw of their match with Lancashire. Kent and Gloucestershire met for the first time, and the match was drawn; unfortunately neither county mustered its full strength, for almost the whole season the former county, which only won one match, was deprived of the valuable services of Lord Harris.

Surrey beat Yorkshire, Notts, Gloucestershire, and Derbyshire each twice, and Lancashire, Middlesex, Kent, and Sussex each once. They lost to Lancashire and Middlesex, and played drawn games with Kent and Sussex.

Lancashire beat Sussex, Kent, Gloucestershire, and Derbyshire each twice, and Surrey and Notts once each. They were beaten

by Surrey, Notts, and Yorkshire, and played a drawn game with Yorkshire.

Nottinghamshire beat Sussex, Kent, and Gloucestershire each twice, and Lancashire and Middlesex each once. They lost to Surrey twice and to Lancashire once, and drew with Yorkshire twice and Middlesex once.

Middlesex beat Surrey, Yorkshire, Kent, and Gloucestershire; lost to Surrey and Notts, and played drawn games with Notts, Yorkshire, Kent, and Gloucestershire.

Yorkshire beat Derbyshire twice, and Lancashire, Kent, Sussex, and Gloucestershire once each. They were beaten by Surrey twice and by Middlesex once, and played two drawn games with Notts and one each with Lancashire, Kent, Middlesex, Sussex, and Gloucestershire.

Sussex beat Kent and Gloucestershire. They were defeated by Notts and Lancashire twice each, and by Surrey, Yorkshire, Kent, and Gloucestershire once each. The drawn games were with Surrey and Yorkshire.

Kent gained a victory over Sussex. They were beaten twice by Lancashire and twice by Notts, and once each by Yorkshire, Surrey, Middlesex, and Sussex. They drew twice with Gloucestershire, and once each with Surrey, Middlesex, and Yorkshire.

Gloucestershire beat Sussex, lost to Surrey, Notts, and Lancashire twice each, and to Middlesex, Yorkshire, and Sussex once each. They played two drawn games with Kent, and one each with Middlesex and Yorkshire.

The following innings of three-figures were hit in the course of these matches:—

For Surrey—Mr. W. W. Read, 247, 145, and 100; Mr. W. E. Roller, 120 and 118; Mr. K. J. Key, 179; Lohmann, 115; and Mr. J. Shuter, 100.

For Lancashire—Mr. J. Eccles, 113; Robinson, 111 (not out); and Mr. A. G. Steel, 105.

For Nottinghamshire—Shrewsbury, 267, 135, 130, 119 (not out), 119, and 101; Barnes, 160, 120, and 115; and Gunn, 205 (not out).

For Middlesex—Mr. A. J. Webbe, 243 (not out) and 192 (not out).

For Yorkshire—Ulyett, 199 (not out), 124, 111 (not out), and 104; Hall, 160, 119 (not out), and 110; Lee, 165 and 119; Hon. M. B. Hawke, 125, and Bates, 103.

For Sussex—Quaife, 111 ; Mr. W. Newham, 108, and Bean, 105 (not out).

For Kent—Frank Hearne, 144 ; Mr. A. J. Thornton, 137, and Mr. W. Rashleigh, 108.

For Gloucestershire—Mr. W. G. Grace, 183 (not out), 113 (not out), 113, 103 (not out), and 101.

The following figures give the highest and lowest innings played for and against each county, the total runs scored by each county, the wickets lost, and the average runs produced by these wickets:—

	Highest inn. for	Lowest inn. for	Highest inn. agst.	Lowest inn. agst.
Surrey	557	79	339	42
Lancashire	444	121	590	47
Notts	596	89	289	84
Middlesex	527	81	596	55
Yorkshire	590	55	527	85
Sussex	293	79	570	90
Kent	364	47	559	77
Gloucestershire	369	84	424	109
Derbyshire	174	42	491	126

	Total runs.	Wickets lost.	Average.
Surrey	6,247	239	26·33
Lancashire	4,708	211	22·66
Notts	5,285	191	27·128
Middlesex	3,382	151	22·60
Yorkshire	5,784	229	25·59
Sussex	4,133	226	18·65
Kent	4,583	252	18·47
Gloucestershire	5,296	256	20·176
Derbyshire	1,569	120	13·9

The following table gives the batting and bowling averages of some of the principal county players in the fifty-eight matches :—

NOTTS.

Batting.	Most in an innings.	Average.	*Bowling.*	Wickets.	Average.
Shrewsbury	267	77·2	Attewell	68	13·21
Gunn	205*	42·1	Flowers	43	16·1
Barnes	160	38·0			

SURREY.

Mr. Key	179	51·15	Lohmann	108	13·94
Mr. Read	247	43·0	Bowley	56	17·50

LANCASHIRE.

Robinson	111*	38·10	Watson	80	15·24
Eccles	113	31·0	Briggs	81	17·48

* Not out.

GLOUCESTERSHIRE.

Dr. Grace ...	183*	.....	63·19	Dr. Grace	64	.....	21·63
YORKSHIRE.								
Hall	160	.....	47·10	Peel	59	.....	17·56
Ulyett	199*	.....	48·18				
MIDDLESEX.								
Mr. Webbe ...	243*	.....	52·4	Mr. Robertson ...	41	.....	18·13
				Burton...	42	.....	19·14

* Not out.

The desirability of forming a council for the regulation of all matters concerning county cricket was considered by a provisional committee consisting of representatives from Surrey, Sussex, Middlesex, Kent, and Gloucestershire, which was appointed at the close of 1886. In April of 1887, it reported that such council, if formed, should have no executive powers as regards the laws of cricket or the rules of county qualification, but that its formation would greatly facilitate the settlement of the status of counties, the nomination of trustworthy umpires, and the present unsatisfactory prevalence of drawn matches. At a meeting of the county secretaries in July at Lords', it was unanimously agreed, "That upon all questions raised under the rules of county cricket qualification, the Committee of the M.C.C. shall adjudicate."

The question of "l. b. w." has on more than one occasion come to the front during the past season, and every true lover of cricket will gladly hail some alteration in the present rules.

In the spring the Marylebone Club celebrated its centenary at Lords' ground. Just one hundred years ago certain members of the White Conduit Club, which used to hold its meetings at Islington, formed themselves into the present club, which has since flourished with such success.

The weakness of the gentlemen in bowling was again shown during the past year, when they were twice defeated by the players, once by an innings and 122 runs, and again by an innings and 16 runs.

Previously to coming to London, the Oxford team had not won a single match; but the tide of fortune turned with their meritorious defeat of Middlesex by an innings and 229 runs, and of Surrey by 82 runs. Curiously enough, in the inter-varsity match which Oxford won by seven wickets, Gresson for Oxford and Hale for Cambridge took three wickets without a run. The fielding of both elevens was poor.

The past yacht racing season has been of more varied interest than that of 1886. The Jubilee match round the United Kingdom failed to attract the crack American yachts, or to attract many entries. That the "Genesta" would, barring accidents, prove the winner was a foregone conclusion: during the earlier part of the season she sailed in the A class, but in this race she was the only representative of the modern type of racer, and carried the sail plan of a B class cutter. The competitors consisted of three cutters, the "Genesta," "Mabel," "Sleuthhound;" three schooners, "Seline," "Aline," "Gwendolin;" four yawls, "Dawn," "Dauntless," "Vol au Vent," "Atlantis;" and one ketch, the "Bridesmaid." At the start, the "Genesta" opened her lead in every tack made, and finally won the race easily, performing the distance of 1,590 miles in 12 days, 16 hours, 55 minutes, 30 seconds.

The yachts "Dauntless" and "Coronet" began the Ocean Race from New York Harbour to Roche's Point at 11.4 A.M. on March 12th. The "Coronet" got away first, the "Dauntless" following five minutes later. On March 27th the "Coronet" crossed the winning line at Roche's Point at 12.50, having made the passage in 14 days, 19 hours, and 3½ minutes, in very boisterous weather. The "Dauntless" passed the winning point 29 hours, 56 minutes after her conqueror.

The new measurement rule of sail area and load-line length was on its trial in the New Thames Channel match, in which the "Thistle" showed marvellous speed in a light breeze, making very light work of beating her competitors, amongst whom were the "Genesta," and the "Irex," last year's champion.

This new rating is ascertained by multiplying the sail area by the length on the loadwater-line, and dividing the product by 6,000. A modified time-allowance scale has been framed, and the impost on the A class vessels has been lightened.

In the C class races, the old "Neptune" and the "Wendur" have sustained their reputations.

The international yacht race from Torquay to Portsmouth over a distance of 110 miles, was won by the "Irex," who just saved her time allowance by 44 seconds, the "Neptune" was second, and the "Hyacinth" third.

The "Thistle," which was purposely designed to compete with the champion American yacht for the possession of the Queen's Cup, won at the Isle of Wight in 1851 by the U.S.A. yacht "America," is of the following dimensions: length over load-

water-line, 85 feet; breadth, 20 feet 3 inches; depth of hold, 14 feet 1 inch; tonnage (register), 100·5. She has a flare, which is of great advantage in standing her enormous press of canvas, a clipper stem, and a considerable overhang of stem and stern which allows an exceptionally large mainsail. The hull up to the covering-board is plated with steel. The "Volunteer," which was selected to compete with the "Thistle," is of the following dimensions: length over all, 106 feet; length over water-line, 85 feet 9 inches; breadth, extreme, 23 feet 2 inches; depth of hold, 10 feet; sail area, 9,000 square feet; sailing length (N.Y. Yacht Club), 89 feet. To the great mortification of her admirers, the "Thistle" proved unable to wrest the cup from her opponent, being beaten in the first race by 19 minutes 23¾ seconds, and in the second by 9 minutes.

The past rowing season practically proved a blank so far as professional rowing is concerned. In February G. Bubear rowed G. J. Perkins on the Tyne for the aquatic Championship of England, winning by two lengths. Robert Watson Boyd, the ex-champion sculler, died at Middlesboro'-on-Tees on the 1st of July, at the early age of 33.

For the first time in the annals of the Henley Regatta, an appeal for pecuniary support was made last spring to the public which we have reason to believe was not very generously responded to. The expenses of the meeting have for long exceeded the income, and Messrs. Willan and Goldie very rightly urge that Henley is unlike a cricket ground where gate-money can be taken; the regatta has become a national spectacle, and it is only right that onlookers should contribute something towards the pleasure provided for them.

The feature of the racing at Henley last season was the success of Cambridge, who won all the eight races on the last day, five wins falling to Trinity Hall. The final heat for the Silver Goblet pairs was won easily by the Third Trinity Boat Club. The Grand Challenge Cup was for the second year in succession won by Trinity Hall, who after a most exciting race beat Thames by 4 feet. They were again successful in the Ladies' Challenge, which they wrested from First Trinity by one-and-a-quarter lengths. The Wyfold Challenge for fours was won by Pembroke. The best race of the day was that between "The Hall" and Thames for the Thames Challenge Cup; up to Remenham Rectory they were on even terms, at the farm Thames led by half a length, but immediately afterwards "The Hall" forged ahead,

and were half-a-length ahead at the mile post, whence they gradually drew ahead and won a very hardly-contested race.

"The Hall" scored two more successes by winning the Visitors' Challenge for fours, and the Stewards' Challenge also for fours.

In the Diamond Sculls Gardner led throughout, being three lengths ahead of his opponent Nickalls at the beginning of the grounds of Phyllis Court, where the latter ran foul of a rowing boat.

Cambridge had previously been successful in the inter-varsity race ; during the practice of the two crews they appeared to be the faster, and that this was so was proved by the result of the race, which they won easily by three-and-a-half lengths, though many were of opinion that the Oxonians, who made many gallant spurts, which, unfortunately for them, were neutralised by the indifferent steering of their coxswain, were, but for the steering, more than able to hold their own with their opponents. Unfortunately, the chances of Oxford were destroyed by an accident when nearing Barnes Bridge, for what we think might and would have proved a most exciting race, became a certainty for Cambridge, owing to the breaking of Maclean's oar at No. 7 in the Oxford boat which stopped for three strokes.

The race for the Amateur Championship of the Thames was rowed in one heat, Mr. Pitman, the winner of 1886 and holder of the silver sculls, having resigned ; what promised to be an excellent race was spoilt by Mr. Gardner fouling Hammersmith Bridge, and Mr. Nickalls (Magdalene College, Oxford) turned the tables on his conqueror at Henley, and proved an easy winner.

The feature of the University sports was the mile race, which, though robbed of some of its interest by the inability through illness of Mr. J. C. Waters to take part in it, was run in 4 mins. 25$\frac{2}{5}$ secs., the fastest time by 1 second yet recorded at these meetings. This was accomplished by the dark blue, Mr. Cross, against a strong wind, who a short time afterwards won the half-mile race at the first spring meeting of the London Athletic Club in the good time of 1 min. 57$\frac{1}{2}$ secs., or 2 seconds slower than the fastest on record. Mr. Cross added further to his laurels by winning the mile race for the Amateur Championship by 2 yards, in the same time as recorded in the University sports. The result of these sports was an easy win for Cambridge by six events out of nine, the only events won by Oxford being the mile, three miles, and high jump. Excellent races

were witnessed for the hurdles and quarter mile, and the 100 yards race was a dead heat between two Cambridge men.

In July Mr. C. G. Wood beat the English record of 32¼ secs., for the 300 yards race by ¼ of a second.

The question of grouse disease has once more exercised the minds of sportsmen. During the spring and summer of the past year the disease prevailed extensively on the Ayrshire and Cumberland moors, but practically died out by the middle of June. In July an interesting report was published by Dr. E. Klein, F.R.S., who states that the diseased birds examined by him differed in this, that some died in a plump, others in a wasted condition. The symptoms were the same as those noticed in previous epidemics—loss of feathers on the legs, darker colour of plumage on the back, hoarse voice, and sluggish abnormal flight. The birds when dead are generally found near water.

Dr. Klein's experiments have led him to set aside the tape-worm theory as the cause of this disease; he found the liver to be the organ most constantly and distinctly affected, microscopic sections of it showing the existence in the capillary blood-vessels and in the large branches of the veins of the liver, of numerous objects foreign to the liver or any other tissue as well as to the blood of the bird. Of these bodies some were cylindrical, some spindle-shaped, some irregular, and others irregularly elongated. Each contained a hyaline protoplasm in which one or two oval nuclei were occasionally noticed, but most of the protoplasm of the corpuscles was filled with spherical or irregular coarse particles.

The presence of these fungi in the blood-vessels of the liver would at once explain the diseased condition of the birds examined, and Dr. Klein is now undertaking an examination of these corpuscles in a living state, their distribution in the diseased birds, and their distribution and their spores on the moors, with a view to taking preventive measures in the future.

Mr. Jeffery, of 60, Queen Victoria Street, London, has patented an improved telescopic sight for sporting rifles, which possesses amongst other advantages that of being small enough to carry in a pocket till wanted for use. The telescope is from 10 inches to 12 inches in length, and about ¾ inch in diameter; in the body of it there are two wires intersecting each other at right angles which act as the foresight, the object-glass draw is fitted with a screwed collar for focussing the object, and for preventing

the focus being upset by the recoil of the rifle. The eye-piece draw is provided with a focussing screw collar by which the focus of the intersecting wires can be regulated.

One of the great events of the racing season was the Jubilee Stakes at Kempton Park for which there was an excellent entry: Bendigo, Martley, St. Mirin, Annamite, and Kilwarlin met. There is little doubt that the City and Suburban and the Chester and other meetings suffered from the interest centred in this race, and few victories have been more popular than that of the winner of the Eclipse Stakes of 1886.

Whether these large stakes are to the benefit of racing or the reverse is very questionable; they have undoubtedly been detrimental to some of the "classic" races in which public interest seems to be yearly on the wane. The Epsom meetings have perhaps lost more ground in public favour than any, a fact due in no small measure to the short-comings of the executive. The Derby and Oaks no longer hold the position they have held so long; the Leger and Criterion Stakes at Newmarket are also undoubtedly on the wane.

The Derby of 1887 was almost devoid of interest; as in 1886, the favourite started with odds on him, but the sequel proved that the Baron's powers were over-rated by the public, amongst whom some enthusiasts looked upon him as the best horse of his year; but this does not say much considering the mediocrity of his competitors, whose previous running had been of an in-and-out character. Of Merry Hampton, his conqueror, an undoubtedly good horse, little or nothing was known beyond the result of his trial.

The meeting of Enterprise and Florentine for the third time gave an interest to the Two Thousand which would otherwise have been wanting. As a two-year old Enterprise had run five times, twice successfully; the straining of his shoulder when he bolted during a gallop a-week before the Derby robbed this latter race of much of its attractions.

Many of the early handicaps and two-year old races were won by outsiders; Oberon's chances of winning the Lincolnshire handicap were so lightly thought of owing to his want of success in 1886, when his only win was the Select Stakes of the Newmarket Second October Meeting, that he was allowed to start at 50 to 1.

Ascot proved one of the most interesting meetings of the year; Ormonde appeared in public then for the first time during the

season. One of the most exciting races at the meeting was that for the Hardwicke Stakes, in which he set his seal on his fame by just beating Minting by a neck; the latter, who has the credit of being the only horse that can make Ormonde gallop, ran a really good horse. In the Jubilee Cup, a new feature of Thursday's racing, he proved a very clever winner against such formidable competitors as Bendigo and St. Mirin. The field for the race was a small one; Bendigo started at 15 to 8 on, and Minting at 5 to 1, each being penalised 10 lbs. To the surprise of many Bendigo appeared to be unable to hold his own when half the distance had been compassed. Eurasian, who like Carlton won some good races during the year, carried off the Alexandra Plate against all comers at weight for age.

If the three-year olds of 1887 were a very moderate lot, the same cannot be said of such two year olds as Friar's Balsam (for whom his joint-owners, Lord Alington and Sir Frederick Johnstone, have refused more than one offer of 10,000*l.*), Satiety, and Seabreeze.

The son of Hermit, who like many of his famous predecessors won the New Stakes, and Satiety, have an enviable record, but the most striking feature in the two-year old running of the past season was the success of Isonomy's stock.

The defeat of Harpenden in the Jubilee handicap at Sandown after his winning at Kempton was undoubtedly a surprise to many, but the distance was evidently beyond his tether.

Kilwarlin's victory in the St. Leger was a blow to the numerous supporters of Merry Hampton, who believed that but for his mishap just before the race he would have justified their faith in his staying powers.

A looseness of management which was exposed at some meetings during the past year excited a good deal of comment, and the indifference shown by the committee of Tattersall's in refraining from authorising the immediate settlement of the starting-price bets on the Northamptonshire Stakes was a source of annoyance to many.

The legislation of the Stewards of the Jockey Club calls for some notice. During the past summer they announced their intention of revising the rules as to objections. The chief alterations proposed for discussion and confirmed during the First October Meeting at Newmarket were an extension of time for lodging protests to fourteen days, Rule 101 to remain unaltered but objection on the ground of omission, error, or mis-statement

in the entry of age, or concerning registered partnership to be included in the fourteen days' limit. In cases of default the limit of twelve months to be reduced to six, and no limit to be put to the time for objections which are considered wilful or fraudulent. The rule referring to a protest being lodged before the conclusion of the meeting to be erased, and the words "twenty-four hours" substituted.

The following tables give the winners of some of the chief races since 1880 :—

Derby.

1880	Bend Or.
1881	Iroquois.
1882	Shotover.
1883	St. Blaise.
1884	St. Gatien. / Harvester.
1885	Melton.
1886	Ormonde.
1887	Merry Hampton.

Oaks.

1880	Jenny Howlett.
1881	Thebais.
1882	Geheimneiss.
1883	Bonnie Jean.
1884	Busybody.
1885	Lonely.
1886	Miss Jummy.
1887	Reve d'Or.

Two Thousand.

1880	Petronel.
1881	Peregrine.
1882	Shotover.
1883	Galliard.
1884	Scot-free.
1885	Paradox.
1886	Ormonde.
1887	Enterprise.

One Thousand.

1880	Elizabeth.
1881	Thebais.
1882	St. Marguerite.
1883	Hauteur.
1884	Busybody.
1885	Farewell.
1886	Miss Jummy.
1887	Rêve d'Or.

St. Leger.

1880	Robert the Devil.
1881	Iroquois.
1882	Dutch Oven.
1883	Ossian.
1884	Lambkin.
1885	Melton.
1886	Ormonde.
1887	Kilwarlin.

Chester Cup.

1880	Fashion, 3 yrs, 6 st. 5 lb.
1881	Windsor, 4 yrs., 6 st. 6 lb.
1882	Prudhomme, 5 yrs., 8 st. 4 lb.
1883	Biserta, 3 yrs., 6 st. 4 lb.
1884	Havock, 6 yrs., 7 st. 10 lb.
1885	Merry Prince, 5 yrs., 7 st. 3 lb.
1886	Eastern Emperor, 5 yrs., 8 st. 2 lb.
1887	Carlton, 4 yrs., 7 st. 11 lb.

City and Suburban.

1880	Master Kildare, 5 yrs., 9 st. 2 lb.
1881	Bend Or, 4 yrs., 9 st.
1882	Passaic, 4 yrs., 6 st. 7 lb.
1883	Roysterer, 5 yrs., 7 st.
1884	Quicklime, 5 yrs., 7 st. 5 lb.
1885	Bird of Freedom, 3 yrs., 6 st. 4 lb.
1886	Royal Hampton, 4 yrs., 8 st. 4 lb.
1887	Merry Duchess, 5 yrs., 7 st. 5 lb.

Alexandra Plate (Ascot).

1880	Thurio, 5 yrs., 9 st. 6 lbs.
1881	Robert the Devil, 4 yrs., 9 st. 1 lb.
1882	Fiddler, 4 yrs., 9 st.
1883	Faugh-a-Ballagh, 4 yrs., 9 st.
1884	Corrie Roy, 6 yrs., 9 st. 3 lb.
1885	St. Gatien, 4 yrs., 9 st. 5 lb.
1886	Blue Grass, 6 yrs., 9 st. 7 lb.
1887	Eurasian, 5 yrs., 9 st. 6 lb.

Northumberland Plate.

1880	Mycenæ, 4 yrs., 7 st. 13 lb.
1881	Bonnie Doon, 4 yrs., 7 st. 3 lb.
1882	Victor Emmanuel, 5 yrs., 8 st.
1883	Barcaldine, 5 yrs., 9 st. 10 lb.
1884	Lawminster, 6 yrs., 7 st. 13 lb.
1885	Blue Grass, 5 yrs., 7 st. 13 lb.
1886	Stone Clink, 4 yrs., 7 st. 8 lb.
1887	Exmoor, 4 yrs., 8 st. 12 lb.

Gold Cup (Ascot).

1880	Isonomy, 5 yrs., 9 st. 3 lb.
1881	Robert the Devil, 4 yrs., 9 st.
1882	Foxhall, 4 yrs., 9 st.
1883	Tristan, 5 yrs., 9 st. 4 lb.
1884	St. Simon, 3 yrs., 7 st. 9 lb.
1885	St. Gatien, 4 yrs, 9 st.
1886	Althorp, 4 yrs., 9 st.
1887	Bird of Freedom, 5 yrs., 9 st. 4 lb.

Cambridgeshire.

1880 Lucetta, 4 yrs., 7 st. 1 lb.
1881 Foxhall, 3 yrs., 9 st.
1882 Hackness, 4 yrs., 6 st. 4 lb.
1883 Bendigo, 3 yrs., 6 st. 10 lb.
1884 Florence, 4 yrs., 9 st. 11 lb.
1885 Plaisanterie, 3 yrs., 8 st. 12 lb.
1886 Sailor Prince, 6 yrs., 7 st. 7 lb.
1887 Gloriation, 3 yrs., 7 st. 6 lb.

Cesarewitch.

1880 Robert the Devil, 3 yrs., 8 st. 6 lb.
1881 Foxhall, 3 yrs., 7 st. 12 lb.
1882 Corrie Roy, 4 yrs., 8 st. 12 lb.
1883 Don Juan, 3 yrs., 5 st. 10 lb.
1884 St. Gatien, 3 yrs., 8 st. 10 lb.
1885 Plaisanterie, 3 yrs., 7 st. 8 lb.
1886 Stone Clink, 4 yrs., 7 st. 7 lb.
1887 Humewood, 3 yrs., 7 st. 11 lb.

Grand National.

1880 Empress, 5 yrs., 10 st. 7 lb.
1881 Woodbrook, aged, 11 st. 3 lb.
1882 Seaman, 6 yrs., 11 st. 6 lbs.
1883 Zoedone, 6 yrs., 11 st.
1884 Voluptuary, 6 yrs., 10 st. 5 lb.
1885 Roquefort, 6 yrs., 11 st.
1886 Old Joe, aged, 10 st. 9 lb.
1887 Gamecock, aged, 11 st.

New Stakes (Ascot).

1880 Sir Charles, 9 st. 3 lb.
1881 Kermesse, 8 st. 7 lb.
1882 Adriana, 8 st. 7 lb.
1883 Wild Thyme, 9 st.
1884 Melton, 8 st. 10 lb.
1885 Saraband, 9 st. 3 lb.
1886 Enterprise, 8 st. 10 lb.
1887 Friar's Balsam, 8 st. 13 lb.

Manchester Cup.

1880 Isonomy, 5 yrs., 9 st. 12 lb.
1881 Valour, 6 yrs., 8 st. 9 lb.
1882 Wallenstein, 5 yrs., 8 st. 5 lb.
1883 Primrose II, 4 yrs., 7 st. 6 lb.
1884 Florence, 4 yrs., 7 st. 2 lb.
1885 Borneo, 4 yrs., 7 st. 1 lb.
1886 Riversdale, 3 yrs., 6 st. 1 lb.
1887 Carlton, 4 yrs., 8 st. 9 lb.

Goodwood Stakes.

1880 Reveller, 4 yrs., 7 st. 4 lb.
1881 Brown Bess, 5 yrs., 6 st. 8 lb.
1882 Fortissimo, 4 yrs., 8 st. 3 lb.
1883 Corrie Roy, 5 yrs., 9 st.
1884 Stockholm, 4 yrs., 6 st. 8 lb.
1885 Void.
1886 Winter Cherry, 3 yrs., 5 st. 7 lb.
1887 Carlton, 4 yrs., 9 st.

Goodwood Cup.

1880 Dresden China, 4 yrs., 8 st. 7 lb.
1881 Mad. du Barry, 6 yrs, 8 st. 11 lb.
1882 Friday, 5 yrs., 7 st. 11 lb.
1883 Border Minstrel, 3 yrs., 7 st. 5 lb.
1884 St. Simon, 3 yrs., 8 st.
1885 Althorp, 3 yrs., 7 st. 7 lb.
1886 Bard, 3 yrs., 7 st. 10 lb. (w.o.).
1887 Savile, 3 yrs., 7 st. 7 lb.

Lincolnshire Handicap.

1880 Rosy Cross, 6 yrs., 7 st. 13 lb.
1881 Buchanan, 4 yrs., 6 st. 10 lb.
1882 Poulet, 5 yrs., 8 st. 7 lb.
1883 Knight of Burghley, a., 7 st. 8 lb.
1884 Tonans, 6 yrs., 8 st. 4 lb.
1885 Bendigo, 5 yrs., 8 st. 5 lb.
1886 Fulmen, 6 yrs., 7 st. 13 lb.
1887 Oberon, 4 yrs., 7 st. 8 lb.

Stewards' Cup (Goodwood).

1880 Elf King, 4 yrs., 7 st. 9 lbs.
1881 Mazurka, 3 yrs., 6 st. 10 lbs.
1882 Lowland Chief, 4 yrs., 8 st. 8 lb.
1883 Hornpipe, 6 yrs., 8 st. 9 lbs.
1884 Sweetbread, 5 yrs., 9 st. 3 lb.
1885 Dalmeny, 5 yrs., 6 st. 13 lb.
1886 Crafton, 4 yrs., 7 st. 11 lb.
1887 Upset, 4 yrs., 6 st. 3 lb.

Hunt Cup (Ascot).

1880 Strathern, 4 yrs., 6 st. 5 lb.
1881 Peter, 5 yrs., 9 st. 3 lb.
1882 Sweetbread, 3 yrs., 6 st. 4 lb.
1883 Elzevir, 3 yrs., 7 st. 7 lb.
1884 Acrostic, 4 yrs., 6 st. 5 lb.
1885 Eastern Emperor, 4 yrs., 6 st. 2 lb.
1886 Despair, aged, 7 st. 13 lb.
1887 Gay Hermit, 4 yrs., 7 st. 13 lb.

Northamptonshire Stakes.

1880 Dresden China, 4 yrs., 8 st. 4 lb.
1881 Commandant, 5 yrs., 7 st. 9 lb.
1882 Sun of York, 6 yrs., 6 st. 12 lb.
1883 Glenluce, 5 yrs., 7 st. 7 lb
1884 Loch Ranza, 3 yrs., 7 st. 5 lb.
1885 Marmora, 3 yrs., 5 st. 11 lb.
1886 Sir Kenneth, 4 yrs., 8 st.
1887 Middlethorpe, aged, 8 st. 12 lb.

A. Llewelyn Roberts.

TABLE OF ALL THE PUBLIC GENERAL ACTS

PASSED IN THE SECOND SESSION OF THE TWENTY-FOURTH PARLIAMENT OF GREAT BRITAIN AND IRELAND.

50 & 51 VICTORIÆ. A.D. 1887.

(The Acts are given in the order in which they were passed, the number denoting the chapter. An abstract of those Acts distinguished by an asterisk is given in the pages following this table, which contain a classified epitome of the more important statutes passed during the session.)

1. An Act to apply certain sums out of the Consolidated Fund to the service of the years ending on the 31st day of March, 1887 and 1888.

2. An Act to provide, during 12 months, for the Discipline and Regulation of the Army.

(Amends s. 41 of 44 & 45 Vict. c. 58, as to offences punishable by the ordinary law of England.
s. 57 of 44 & 45 Vict. c. 58, as to commutation and remission of sentences.)

3. An Act to amend the Acts relating to the County Courts so far as regards the payment of certain expenses connected with County Courts.

(Amends s. 82 of 19 & 20 Vict. c. 108, and s. 14 of 29 Vict. c. 14.
" s. 85 of 19 & 20 Vict. c. 108.)

4. An Act to amend the provisions of the Merchant Shipping (Fishing Boats) Acts.

(Empowers the Board of Trade to exempt fishing boats from ss. 19 and 21 of 46 & 47 Vict. c. 41. Extends to skippers certain provisions of 46 & 47 Vict. c. 41, relating to seamen.
Applies provisions of 46 & 47 Vict. c. 41, as to disputes, to disputes between skippers and owners.
" provisions of 46 & 47 Vict. c. 41, as to certificates of competency, to second hands as well as skippers.)

5. An Act to amend the law respecting the Customs and Duties of the Isle of Man.

6. An Act to amend the Supreme Court of Judicature Act (Ireland), 1877.

7. An Act to Amend the Customs Consolidation Act, 1876.

(Amends s. 179 of 39 & 40 Vict. c. 36.)

*8. An Act to amend the Incumbents of Benefices Loans Extension Act, 1886.

*9. An Act to remove the Disabilities of the Police to vote at Parliamentary Elections.

10. An Act to enable H.R.H. the Duke of Connaught to return to England for a limited time for the purpose of being present at the celebration of Her Majesty's Jubilee without thereby resigning his command in Bombay.

11. An Act for giving facilities for the conversion of India 4 per

cent. Stock into India 3½ per cent. Stock, and for other purposes relating thereto.

12. An Act to amend the Bishopric of Truro Act, 1876, and the Truro Chapter Act, 1878.

13. An Act to extend, in certain cases, the provisions of the Superannuation Act, 1859, and to extend and otherwise amend the provisions of the Colonial Governors (Pensions) Acts, 1865 and 1872.

(Extends 28 & 29 Vict. c. 113, and 35 & 36 Vict. c. 29, to the High Commissioner in Cyprus.)

14. An Act to apply the sum of 13,675,659*l.* out of the Consolidated Fund, to the service of the year ending March 31st, 1888.

*15. An Act to grant certain Duties of Customs and Inland Revenue, to alter other duties, and to amend the laws relating to the Inland Revenue.

16. An Act to amend the law respecting the National Debt and the charge thereof on the Consolidated Fund, and to make further provision respecting Local Loans.

(Amends 38 & 39 Vict. c. 45, s. 1; as to amount of permanent annual charge and sums payable thereout.
,, 44 & 45 Vict. c. 55, and 47 & 48 Vict. c. 23; as to Special Sinking Fund and decrease of permanent charge.
,, 38 & 39 Vict. c. 45, s. 5; as to application of old Sinking Fund.
Exchanges sets of annuities terminating in 1889, 1894, and 1899, for longer terminable annuities.
Repeals 48 & 49 Vict. c. 89; Public Works Loans Act, 1875, ss. 14, 16, 17, and s. 15 down to "form part of the Consolidated Fund," and from "the annuities whether terminable or perpetual," down to "in the names directed by the warrant."
,, 40 & 41 Vict. c. 27; Public Works Loans (Ireland) Act, 1877, ss. 12, 13, 14, 15, 16.
,, 42 & 43 Vict. c. 77; Public Works Loans Act, 1879, ss. 7, 8.
,, 43 Vict. c. 15; National Debt Act, 1880.
,, 43 & 44 Vict. c. 36; The Savings Bank Act, 1880, s. 1, from "and shall be added to and," down to "amount of the annuity."
,, 44 & 45 Vict. c. 55; National Debt Act, 1881, s. 2, from "during 25 years" down to "Sinking Fund Act, 1875"; and from "but the said annuities" to the end of the s.; s. 3, down to "shall be adopted"; and s. 4.
,, 46 and 47 Vict. c. 54; National Debt Act, 1883, ss. 2, 5, 7, and Schedule; and s. 9, down to "Post Office Savings Banks."
,, 47 & 48 Vict. c. 2; National Debt Act, 1884, s. 3.
,, 47 & 48 Vict. c. 23; National Debt (Conversion of Stock) Act, 1884, s. 1, down to "for the purpose of exchange under this Act"; s. 2; s. 3, down to "the said increase; and" and from "if the said account shows" down to "amount of such saving" and from "and the permanent annual charge" to the end of the s.; s. 4; s. 6, down to "consent not having been given"; and s. 7, from "the arrangements made by the Treasury" to the end of the s.
,, 48 & 49 Vict. c. 43; the National Debt Act, 1885.
,, 49 & 50 Vict. c. 19; the National Debt Act, 1886.)

17. An Act to amend the Metropolis Management Acts.

18. An Act to amend the Trusts (Scotland) Act, 1867.

(Empowers trustees to make abatement of rent.)

19. An Act to provide for the fencing of quarries.

*20. An Act to make better provision for the prevention and punishment of Crime in Ireland, and for other purposes relating thereto.

21. An Act to limit the Powers of the Water Companies to cut off the Tenants' Water Supply where the Rate is paid by the Landlord.

(Does not extend to Scotland or Ireland.)

22. An Act to amend the Public Libraries Acts.

(To be construed with the Public Libraries (England) Acts, 1855 to 1884.
Does not apply to Scotland, Ireland, or the City of London.
Repeals so much of s. 15 of the principal Act as incorporates with it certain clauses of the Towns Improvement Clauses Act, 1847.
Public Libraries Amendment Act, 1877, to have effect as if the Public Libraries Act, 1855, were recited therein.
Applies ss. 233, 234, and 236 to 239, both inclusive, of the Public Health Act, 1875, with the necessary modifications.)

*23. An Act to amend the Incumbents' Resignation Act, 1871.

24. An Act to amend the Crofters' Holdings (Scotland) Act, 1886.

(To be read as part of the Crofters' Holdings (Scotland) Act, 1886.
Allows application for stay of proceedings for sale of crofters' effects, within two months of the date of the passing of the Act (Aug. 8), in case of proceedings in dependence at the passing of the Act, or in case of proceedings instituted after the passing of this Act, at any time before the expiration of the *inducia* in the action.)

25. An Act to permit the conditional Release of First Offenders in certain cases.

(Empowers the Court to release upon probation of good conduct instead of sentencing to punishment.)

26. An Act to provide Compensation to the Occupiers of Allotments and Cottage Gardens for crops left in the ground at the end of their tenancies.

(Does not extend to Scotland or Ireland or to the Metropolis.)

27. An Act to amend the Law with respect to weighing Cattle in Markets and Fairs.

*28. An Act to consolidate and amend the Law relating to Fraudulent Marks on Merchandise.

29. An Act for the better Prevention of the Fraudulent Sale of Margarine.

(To come into operation January 1, 1888.)

30. An Act to amend the Settled Land Act (1882).

(Amends s. 21 of 45 & 46 Vict. c. 38.
Applies s. 28 of 45 & 46 Vict. c. 38, to improvements authorised by the Act of 1882.
A rent charge created in pursuance of any Act to pay off moneys advanced to pay expenses of such improvement to be deemed to be applied in payment for such improvement.)

31. An Act further to amend the Acts relating to the raising of Money by the Metropolitan Board of Works; and for other purposes.

(To be cited together with previous Acts as the Metropolitan Board of Works (Money) Acts, 1875 to 1887.
To have effect as one with the Metropolitan Board of Works (Loans) Acts, 1869 to 1871, and the Metropolitan Board of Works (Money) Acts, 1875 to 1886.
Construes s. 8 of 49 & 50 Vict. c. 44, as if the amount authorised to be expended had been limited to 58,000*l.* instead of 53,000*l.*
Amends sub-ss. *e*, *f*, *g*, *i*, and *l* of s. 10 of 49 & 50 Vict. c. 44.
Repeals s. 9 of the Act of 1886.)

32. An Act for extending certain provisions of the Metropolitan Open Spaces Acts, 1877 and 1881, with amendments, to Sanitary Districts throughout England, Wales, and Ireland; and for other purposes.

(Applies to Ireland.
Repeals 44 & 45 Vict. c. 34, s. 1, the following words occurring in the definition

of an "open space," viz., "but shall not include any inclosed land which has not a public road or footpath completely round the same"; and the words in the definition of a "burial ground," viz., "and in which interments have taken place since the year 1800"; and in s. 5 the words, "but such Metropolitan board, vestry, or district board shall not allow the playing of any games or sports therein."

Extends the powers and duties conferred on the Metropolitan Board by 40 & 41 Vict. c. 35, to vestries and district boards.)

*33. An Act to amend the Land Law (Ireland) Act, 1881, and the Purchase of Land (Ireland) Act, 1885, and for other purposes connected therewith.

34. An Act for the transfer to the Metropolitan Board of Works and the maintenance of certain Public Parks and Works in the Metropolis.

(Transfers Victoria Park, Battersea Park, Kennington Park, Bethnal Green Museum Garden, and Chelsea Embankment.)

35. An Act to simplify and amend the Criminal Law of Scotland and its procedure, and to alter the constitution of the Justiciary and Sheriff Courts in Scotland.

36. An Act for amending the allowances payable to Clerks of General Meetings of Lieutenancy.

(Repeals 7 Geo. 4, c. 58, s. 5 and Table B.
" 26 & 27 Vict. c. 65, s. 47, and the part of the schedule headed "V. Allowances to Clerks.")

37. An Act to grant money for the purposes of certain Local Loans; and for other purposes relating to Local Loans.

38. An Act to provide for the earlier closing of Premises licensed for the Sale of Excisable Liquors in Scotland.

(Applies to Scotland only, and not to any places holding 50,000 inhabitants and upwards.)

39. An Act to make provision for altering and varying Lunacy Districts in Scotland.

(To be construed as one with 20 & 21 Vict. c. 71.)

40. An Act to amend the Acts relating to Savings Banks, and to the Purchase of small Government Annuities, and to assuring Payment of Money after Death.

(Amends 43 & 44 Vict. c. 36, as to minimum sum of stock to be invested, and as to investments for lunatics and minors.
" 45 & 46 Vict. c. 51, s. 8, as to insurance on life of third person.
Extends the Acts 1861–1887 to the Channel Islands.)

41. An Act to remove doubts as to the appointment of the Sheriff of Lanarkshire, and to confirm the same.

42. An Act to amend and consolidate the Public Libraries (Scotland) Act.

43. An Act to amend the Stannaries Act, 1869, and for other purposes relating thereto.

(Extends the powers contained in 18 & 19 Vict. c. 32, s. 23 to this Act.)

44. An Act to enable Her Majesty by Order in Council to unite the Colonies of Trinidad and Tobago into one Colony.

45. An Act for further amending the enactments relating to offices stations, and buildings for the Metropolitan Police Force.

46. An Act to amend and extend the Law relating to Truck.

(Amends 1 & 2 Will. 4, c. 37; as to overseers,

Repeals 12 Geo. 1, c. 34, s. 3, and part of s. 8 which applies s. 3.
" 22 Geo. 2, c. 27; so much of s. 12 as applies to any enactment repealed by this Act.
" 30 Geo. 2, c. 12, ss. 2. 3: 57 Geo. 3, c. 115, 122; 1 & 2 Will. 4, c. 37, s. 10, down to "be produced to the court and jury" inclusive; ss. 11, 12, 15, 16, 18, 19; in s. 20 the words "or servant in husbandry"; ss. 21, 22, 24, from "and unless the agreement" inclusive to end of s.; and s. 25 from "all workmen" to "purposes aforesaid," and the schedules.)

47. An Act to provide for examination into the affairs of Trustee Savings Banks, and to remove doubts as to the law relating to the winding up of such Banks.

*48. An Act to facilitate the provision of Allotments for the Labouring Classes.

49. An Act to amend the Charitable Trusts Acts, 1853 to 1869, so far as respects the officers of the Charity Commissioners for England and Wales, and the official trustees acting under those Commissioners.

50. An Act to apply a sum out of the Consolidated Fund to the service of the year ending on the 31st day of March, 1888, and to appropriate the supplies granted in this session of Parliament.

51. An Act to amend the Valuation of Lands (Scotland) Amendment Act, 1867.

52. An Act to amend the Secretary for Scotland Act, 1885.

53. An Act for repealing certain enactments relating to Executors and the Procedure in cases of Escheat; and for regulating the procedure in such cases.

54. An Act to enable Her Majesty to provide for the Government of Her Possessions acquired by Settlement.

55. An Act to consolidate the Law relating to the office of Sheriff in England, and to repeal certain enactments relating to Sheriffs which have ceased to be in force or have become unnecessary.

56. An Act to amend the Friendly Societies Act, 1875.

57. An Act to provide for the Registration of Deeds of Arrangement.

*58. An Act to consolidate with amendments the Coal Mines Acts, 1872 and 1886, and the Stratified Ironstone Mines (Gunpowder) Act, 1881.

59. An Act for further promoting the Revision of the Statute Law by repealing enactments which have ceased to be in force or have become unnecessary.

60. An Act to amend the Prison (Officer's Superannuation) Act, 1878, as to Scotland.

61. An Act for appointing Commissioners to inquire and report as to the Boundaries of certain areas of Local Government in England.

62. An Act to amend in certain minor particulars some of the enactments relating to Merchant Shipping and Seamen.

(Repeals 14 & 15 Vict. c. 102, s. 48.
" 43 & 44 Vict. c. 22, s. 4.)

63. An Act to continue various Expiring Laws.

64. An Act to facilitate the establishment of Technical Schools in Scotland.

65. An Act to facilitate the construction of tramways by Her Majesty's Principal Secretary of State for the War Department, and for other purposes connected therewith.

66. An Act to amend the law relating to the discharge of Bankrupts and the Closure of Bankruptcy Proceedings.

67. An Act to amend the Superannuation Acts, 1834 and 1859; and for other purposes.

68. An Act to explain s. 26 of the Pluralities Act, 1838.

(This Act and the Pluralities Act, 1838, to be cited together as the Pluralities Acts, 1838 and 1887, and this Act may be cited separately as the Pluralities Act, 1887.)

69. An Act to amend the Conveyancing (Scotland) Act, 1874, and the Conveyancing (Scotland) Act (1874) Amendment Act, 1879.

70. An Act to amend the Appellate Jurisdiction Act, 1876.

71. An Act to consolidate the Law relating to Coroners.

(Does not apply to Scotland or Ireland.)

72. An Act to amend the Law relating to Expenses of Local Authorities.

73. An Act to amend the Copyholds Acts, and for the Enfranchisement of Copyhold and Customary Lands.

(Amends s. 6 of 21 & 22 Vict. c. 94, instead of the words "admittance or death" shall be read the words "admittance or enrolment on alienation," and instead of the final word "heriot" shall be read the word "enrolment."

,, s. 8 of 21 & 22 Vict. c. 94, the word "thirty" therein to be substituted for "twenty."

,, s. 8 of 15 and 16 Vict. c. 51; the words "in the course of the valuations in any enfranchisement to be effected by an award under the Copyhold Act," to be substituted for the words "upon or prior to any admittance or in the course of such valuations."

Rent charges to be payable on 1st January and 1st July every year.)

ABSTRACTS OF IMPORTANT ACTS

PASSED IN THE TWENTY-FOURTH PARLIAMENT OF GREAT BRITAIN AND IRELAND.

1. THE CHURCH.

[50 Victoriæ, sess. 2, cap. 8.—23rd May, 1887.]

An Act to amend "The Incumbents of Benefices Loans Extension Act, 1886."

Short Title: "Incumbents of Benefices Loans Extension Act, 1886, Amendment Act, 1887."

Section 2 amends 49 & 50 Vict., c. 34, s. 1, and enacts that the words "by extending such term for any period not exceeding twenty years from the yearly period next before the date of the resolution to be passed in respect of such benefice, to be accompanied by a corresponding reduction of the amount of the annual instalment of principal and interest," shall be read and have effect as if the following words had been inserted in lieu thereof; "by extending such term for any period not exceeding twenty years, so that by such extension the amount of the annual instalments payable in respect of the loan shall be reduced as from the day of the annual payment due next before the date of the resolution to be passed in respect of such benefice;" and such extension may be granted notwithstanding the original term may have been before extended. Provided that the whole term of the two extensions shall not exceed in any case twenty years. And in the case of any extension of the time for the payment of instalments the term of years for which the possessions of the benefice are mortgaged shall be enlarged to the like extent.

[50 & 51 Victoriæ, cap. 23.—8th August, 1887.]

An Act to amend the Incumbents Resignation Act, 1871.

Short Title: "The Incumbents Resignation Act, 1871, Amendment Act, 1887."

Section 1 provides that the Act may be cited for all purposes as "The Incumbents Resignation Act, 1871, Amendment Act, 1887," and "The Incumbents Resignation Act, 1871" (herein-after called "The principal Act"), and this Act may together be cited as the Incumbents Resignation Acts, 1871 and 1887. By section 2, this Act is to be construed together with the principal Act. Section 3 defines the expression "terminable mortgage" in this Act to mean any mortgage created for securing the repayment of any loan by annual instalments, payments in the nature of a rent-charge, or otherwise, in a limited number of years. Section 4 enacts that pensions shall vary with tithe averages. Section 5 provides that section 8 of the principal Act, 34 and 35, Vict., c. 44, shall be read as if the following words

were added at the end of the section: "or be an amount which shall not leave a sufficient income to secure the due performance of the services of the church, according to the scale of stipends set forth in the 85th section of the Act of the 1st and 2nd Vict., c. 106;" and section 11 shall be read as if worded as follows: "The annual value of a benefice for the purposes of this Act shall be the net annual value, exclusive of the parsonage, vicarage, or other place of residence of the incumbent, after deducting all rates, taxes, and charges assessed upon and payable out of the benefice, which charges shall include the salary of any curate who is compulsorily employed, and any annual payments in respect of any terminable mortgage having at the time of the sitting of the said Commission more than two years to run." Section 6 enacts that if a retired clerk shall on retirement have become liable to the payment to his successor of any sum on account of dilapidations under the Ecclesiastical Dilapidations Act, 1871, and shall not have paid such sum in the prescribed manner, it shall be lawful for the incumbent of the benefice for the time being to withhold the amounts due from time to time in respect of any pension granted under the principal Act, and to apply the same in discharge of the sum due for dilapidations until the whole debt shall have been discharged. Provided that the amount so withheld in any one year shall not exceed one half the total amount of the pension for such year without the consent of the bishop of the diocese in which the benefice is situated.

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2. SUPPLY AND FINANCE.

[50 & 51 Victoriæ, cap. 15.—5th July, 1887.]

An Act to grant certain Duties of Customs and Inland Revenue, to alter other duties, and to amend the Laws relating to Inland Revenue.

Short Title: "Customs and Inland Revenue Act, 1887."

PART I.—*Customs and Excise.*

Section 2 enacts that the import duties on tea shall be 6*d.* the pound. Section 3 enacts that the duties and drawback on tobacco imported into Great Britain or Ireland shall be, in the case of manufactured tobacco—

Segars 5*s.* the lb.

Cavendish or Negrohead 4*s.* 6*d.* the lb.

Cavendish or Negrohead manufactured in bond, and other manufactured tobacco 4*s.* the lb.

Snuff containing more than 13 lbs. of moisture in every 100 lbs. weight thereof 3s. 9*d.* the lb.

Snuff not containing more than 13 lbs. of moisture in every 100 lbs. weight thereof 4*s.* 6*d.* the lb.

Tobacco in the case of unmanufactured—

Containing 10 lbs. or more of moisture in every 100 lbs. weight thereof 3*s.* 2*d.* the lb.

Containing less than 10 lbs. of moisture in every 100 lbs. weight thereof 3*s.* 6*d.* the lb.;

and in lieu of the drawback now allowable on tobacco exported from Great Britain or Ireland, or deposited in a bonded or Queen's warehouse a drawback of 3*s.* 3*d.* named in section 1 of "The Manufactured Tobacco Act, 1863," 26 & 27 Vict., c. 7, shall be allowed. Section 4 enacts that if any manufacturer of tobacco shall have in his custody or possession any tobacco (except tobacco which must undergo some process of treatment or manufacture before it is fit for sale), or if any dealer in or retailer of tobacco shall have in his custody or possession any tobacco, and such tobacco shall in either case on being dried at a temperature of 212 degrees as denoted by Fahrenheit's thermometer be decreased in weight by more than 35 per cent., he shall incur an excise penalty of 50*l.* and the tobacco shall be forfeited. Roll tobacco or cut tobacco in the custody or possession of a manufacturer of tobacco which is treated in the course of manufacture by baking, or hot-pressing, or stoving, shall be deemed fit for sale when the same has cooled after such treatment, and roll tobacco in such custody or possession, which is treated in the course of manufacture by pressing merely, shall be deemed fit for sale immediately upon being put in press.

Part II.—*Stamps.*

Section 5 enacts that where the premium or consideration for any sea insurance does not exceed the rate of 2*s.* 6*d.* per centum of the sum insured by the policy, the stamp duty upon such policy shall be one penny only. Section 6 reduces the time within which a policy of sea insurance made or executed out of the United Kingdom may be stamped on payment of the duty only to ten days. Section 7 enacts that duties on transfers of debenture stock or county stock and on stock certificates to bearer, shall be, where the transfer is on sale, the same as are charged by "The Stamp Act, 1870," upon a conveyance or transfer on sale of other property by relation to the amount or value of the consideration for the sale; where the transfer is of any other kind than on sale or mortgage, 10*s.*; and in lieu of the duties now payable under section 46 of "The Customs and Inland Revenue Act, 1881," upon every stock certificate to bearer there shall be charged upon every such certificate a stamp duty of an amount equal to three times the amount of the *ad valorem* stamp duty which would be chargeable on a deed transferring the stock specified in the certificate if the consideration for the transfer were the nominal value of such stock. Section 8 provides for a duty of 6*d.* as composition for stamp duties for every full sum of 100*l.* and any fractional part of 100*l.*; and the duty is to be under the management of the Commissioners of Inland Revenue. Section 9 provides for the delivery of accounts to the Commissioners by companies, corporations, and county justices with a view to compound; the officer of such company, &c., by whom the accounts are delivered is to be specified. Section 10 enacts that every account shall be a full and true account of all shares, stock, and funded debt, or county stock existing at the time of the delivery of the account, and of the amount in respect of which payment has been made. Section 11 enacts that

the accounts shall be delivered on or within seven days before the 1st day of February and the 1st day of August in each year, and the duty imposed shall be paid upon the delivery of the account. Section 12 fixes the penalty for not delivering account or not paying duty, at a sum equal to 10 per cent. upon the amount of duty payable, and a like penalty for every month after the first month during which such neglect shall continue. Section 13 exempts companies or corporations formed within the United Kingdom, and having registers abroad in which shares, stock, or funded debt may be registered, and in the case of any Colonial or foreign company or corporation having registers in the United Kingdom in which shares, stock, or funded debt are registered, such shares, &c., for the time being registered in the United Kingdom shall be regarded as constituting all the shares of the company or corporation. Section 14 enacts that the provisions as to composition contained in section 53 of "The Inland Revenue Act, 1880," shall not apply to any debenture stock, corporation stock, municipal stock, or funded debt, created or issued, after the passing of this Act, by the council of any city or municipal borough; and makes similar provisions in the case of metropolitan consolidated stock and annuities. Section 15 provides that so soon as any account has been delivered, and payment of the duty has been made, transfers of any shares, &c., included in such account, and also any share warrants or stock certificates relating to such shares, &c., shall be exempt from stamp duty. Section 16 empowers compounding companies, &c., to require additional payments on registration of transfer, &c.

Part III.—*Income Tax.*

Section 17 provides for an income tax of 7*d.* for every 20*s.* of the annual value or amount of property, profits, and gains chargeable under Schedules (A), (C), (D), or (E); and for every 20*s.* of the annual value of the occupation of lands, tenements, hereditaments, and heritages chargeable under Schedule (B)—in England, the duty of 3½*d.*; in Scotland and Ireland respectively, the duty of 2½*d.* Section 18 provides that farmers may elect to be charged under Schedule D in lieu of Schedule B. Such election to be signified by notice in writing delivered personally or sent by post in a registered letter to the surveyor of taxes for the district within two calendar months after the commencement of the year of assessment. Section 20 enacts that in respect of assessment of income tax under Schedules (A) and (B) and of the inhabited house duties for the year 1887–8 the inspectors or surveyors of taxes shall be the assessors, and, in lieu of the poundage granted to be divided between the assessors and collectors, there shall be paid a poundage of 1½*d.* to the collectors.

3. TRADE AND COMMERCE.

[50 & 51 Victoriæ, cap. 28.—23rd August, 1887.]

An Act to consolidate and amend the Law relating to Fraudulent Marks on Merchandise.

Short Title: "Merchandise Marks Act, 1887."

Section 2 enacts that every person who forges any trade mark; or falsely applies to goods any mark so nearly resembling a trade mark as to be calculated to deceive; or makes any die, block, machine, or other instrument for the purpose of forging a trade mark; or applies any false trade description to goods; or disposes of or has in his possession any instrument for the purpose of forging a trade mark; or causes any of these things to be done; or sells, or exposes for sale, &c., any goods to which any forged trade mark or false trade description is applied, &c., shall, unless he proves that having taken all reasonable precautions against committing an offence against this Act, he had at the time of the commission of the alleged offence no reason to suspect the genuineness of the trade mark, &c.; and that on demand made by or on behalf of the prosecutor, he gave all the information in his power with respect to the persons from whom he obtained such goods; or that otherwise he had acted innocently; be guilty of an offence against this Act. Offenders are liable on conviction on indictment, to imprisonment, with or without hard labour, for a term not exceeding two years, or to fine, or to both imprisonment and fine; and on summary conviction to imprisonment, with or without hard labour, for a term not exceeding four months, or to a fine not exceeding 20*l.* Appeal is allowed to quarter sessions. Section 6 enacts that where any person in the ordinary course of his business is employed, on behalf of other persons, to make dies, &c., for making, or being used in making, trade marks, or as the case may be, to apply marks or descriptions to goods, and where in the case which is the subject of the charge he was so employed by some person resident in the United Kingdom, and was not interested in the goods by way of profit or commission; and if he took reasonable precautions against committing the offence charged; and if he had, at the time of the commission of the alleged offence, no reason to suspect the genuineness of the trade mark, &c.; and if he gave to the prosecutor all the information in his power with respect to the persons on whose behalf the trade mark, &c., was applied, he shall be discharged from the prosecution, but shall be liable to pay the costs incurred by the prosecutor, unless he has given due notice to him that he will rely on the above defence. Section 7 provides that where a watch case has thereon any words or marks which constitute, or are by common repute considered as constituting, a description of the country in which the watch was made, and the watch bears no description of the country where it was made, those words or marks shall primâ facie be deemed to be a description of that country within the meaning of this Act, and the provisions of this Act with respect to goods to which a false trade description has been applied, shall apply accordingly, and for the purposes of this section the expression "watch" means all that portion of a watch which is not the watch case.

Section 8 enacts that every person who after the date fixed by Order in Council sends or brings a watch case, whether imported or not, to an assay office in the United Kingdom for the purpose of being assayed, stamped, or marked, shall make a declaration declaring in what country or place the case was made. If it appears by such declaration that the watch case was made in some country or place out of the United Kingdom, the assay office shall place on the case such mark (differing from the mark placed by the office on a watch case made in the United Kingdom), and in such a mode as may be from time to time directed by Order in Council. Section 9 provides that in any indictment, &c., in which any trade mark or forged trade mark is intended to be mentioned, it shall be sufficient, without further description and without any copy or facsimile, to state that trade mark, &c., to be a trade mark, &c. Section 10 provides that in the case of imported goods, evidence of the port of shipment shall be primâ facie evidence of the place or country in which the goods were made or produced. Section 11 provides for the punishment of accessories. Section 12 provides for the issuing of a search warrant, if considered necessary. Section 13 extends 22 & 23 Vict., c. 17, to offences under this Act. Section 15 enacts that no prosecution for an offence against this Act shall be commenced after the expiration of three years next after the commission of the offence, or one year next after the first discovery thereof by the prosecutor, whichever expiration first happens. Section 16 prohibits the importation of goods which, if sold, would be liable to forfeiture under this Act; and also all goods of foreign manufacture bearing any name or trade mark being or purporting to be the name or trade mark of any manufacturer, &c., in the United Kingdom, unless such name or trade mark is accompanied by a definite indication of the country in which the goods were made or produced, and, subject to the provisions of this section, the goods shall be included among goods prohibited to be imported as if they were specified in section 42 of "The Customs Consolidation Act, 1876," 39 & 40 Vict., c. 36; and enacts that where there is on any goods a name which is identical with, or a colourable imitation of the name of a place in the United Kingdom, that name, unless accompanied by the name of the country in which such place is situate, shall be treated for the purposes of this section as if it were the name of a place in the United Kingdom. Section 2 of "The Revenue Act, 1883," 46 & 47 Vict., c. 55, is repealed as from a day fixed by regulations under this section, not being later than the 1st day of January, 1888. Section 17 enacts that on the sale or in the contract for the sale of any goods to which a trade mark, &c., has been applied, the vendor shall be deemed to warrant that the mark is a genuine trade mark, &c., unless the contrary is expressed in some writing signed by or on behalf of the vendor and delivered at the time of the sale or contract to and accepted by the vendee. Section 18 enacts that where, at the passing of this Act, a trade description is lawfully and generally applied to goods of a particular class, or manufactured by a particular method, to indicate the particular class or method of manufacture of such goods, the provisions of this Act with respect to false trade descriptions shall not apply to such trade description

when so applied: Provided that where such trade description includes the name of a place or country, and is calculated to mislead as to the place or country where the goods to which it is applied were actually made or produced, and the goods are not actually made or produced in that place or country, this section shall not apply unless there is added to the trade description, immediately before or after the name of that place or country, in an equally conspicuous manner with that name, the name of the place or country in which the goods were actually made or produced, with a statement that they were made or produced there. Section 19 enacts that this Act shall not exempt any person from any action, suit, or other proceeding which might, but for the provisions of this Act, be brought against him. Nothing in this Act shall entitle any person to refuse to make a complete discovery, or to answer any question in any action, but such discovery or answer shall not he admissible in evidence against such person. Nothing in this Act shall be construed so as to render liable to any prosecution or punishment any servant of a master resident in the United Kingdom who bonâ fide acts in obedience to the instructions, &c., of such master. Section 23 repeals "The Merchandise Marks Act, 1862," 25 & 26 Vict., c. 88, and any unrepealed enactment referring to any enactment so repealed is to be construed to apply to the corresponding provision of this Act; provided that this repeal shall not affect (*a*) any penalty, forfeiture, or punishment incurred in respect of any offence committed against any enactment hereby repealed; nor (*b*) the institution or continuance of any proceeding or other remedy under any enactment so repealed for the recovery of any penalty incurred, or for the punishment of any offence committed, before the commencement of this Act; nor (*c*) any right, privilege, liability, or obligation acquired, accrued, or incurred under any enactment hereby repealed.

[50 & 51 Victoriæ, cap. 58.—16th September, 1887.]

An Act to consolidate with amendments "The Coal Mines Acts, 1872 *and* 1886," *and "The Stratified Ironstone Mines* (*Gunpowder*) *Act,* 1881."

Short Title: "Coal Mines Regulation Act, 1887."

Part I.—Section 4 prohibits the employment of any boy under the age of 12 and any girl or woman of any age in any mine below ground. Section 5 enacts that no boy above the age of 12 shall be employed for more than 54 hours in any one week in a mine below ground, or for more than 10 hours in any one day. Section 6 enacts that there shall be an interval of not less than 8 hours between the period of employment on Friday and that of employment on the following Saturday. Section 7 enacts that no boy or girl under 12 shall be employed in a mine above ground, and no boy or girl under 13 shall be employed for more than 6 days in any one week, or if employed for more than 3 days in any one week for more than 6 hours in one day, or in any other case for more than 10 hours in one day. Similar hours are fixed for those over 13 years of age as in mines below ground. Section 8 enacts that a register shall be kept of boys, girls, and women employed,

Section 11 prohibits the payment of wages at public houses, &c. Section 12 provides for the regulation of the weighing as near the pit mouth as is practicable of all minerals got by persons who are to be paid according to the actual weight of mineral got by them. Such persons may appoint and remove checkweighers. An inspector of weights shall at least once in every six months examine the weights. Section 16 prohibits the use of single shafts, except for the purpose of making a communication between two or more shafts or of searching for or proving minerals. Section 20 enacts that every mine shall be under a responsible manager who is to exercise daily supervision. Section 22 disqualifies a contractor for mineral or his employé from being a manager. Section 23 regulates the constitution of the board for appointing examiners for granting certificates of competency to managers and under managers. Sections 33–38 provide for returns, plans, notices of accidents, and the fencing of abandoned mines. Sections 39–46 provide for the appointment by the Secretary of State of Inspectors of Mines, and the regulation of their powers. Section 47 enacts that with respect to arbitrations the parties thereto are deemed to be the owner, agent, or manager of the mine on the one hand and the Inspector of Mines on the other. Section 48 makes provisions for coroners' inquests.

Part II.—Section 49 gives general rules for the ventilation of mines, and the appointment of stations at the entrance to a mine, the inspection of machinery, and withdrawal of workmen in case of danger, construction and examination of safety lamps, which are to be so constructed as to be carried safely against the air current ordinarily prevailing in the part of the mine in which they are being used, the provision of distinct and definite signals on travelling planes worked by machinery, the securing of shafts, roofs, and sides. Section 51 enacts that special rules shall be established in every mine for the conduct and guidance of the persons managing the mine calculated to prevent dangerous accidents. Section 53 provides that the Secretary of State may object to these special rules. Section 57 enacts that an abstract of the Act and copy of the rules shall be posted up in a conspicuous place at or near the mine, &c.

Part III.—Section 59 enacts that every person guilty of an offence against this Act for which a penalty is not expressly prescribed, shall be liable to a fine not exceeding, if he is an owner, agent, manager, or under manager, 20*l.*, if any other person 2*l.* for each offence. Section 60 enacts that in cases of wilful neglect endangering life or limb, if the court is of opinion that a fine will not meet the circumstances of the case, offenders shall be liable to imprisonment with or without hard labour for a period not exceeding three months. Section 63 allows appeal to quarter sessions. Section 64 exempts managers, &c., from liability for misrepresentation of parents or guardians as to the age of a boy or girl. Section 69 prohibits the owner of a mine from acting as a justice, &c., in proceedings under this Act. Sections 78–79 provide for the continuance of existing inspectors, examining boards, certificates, and registers. Section 82 provides a temporary saving for the employment of boys and girls between 10 and 12 who before the commencement of this Act (1st January, 1888) have been lawfully employed.

4. LAND.

[50 & 51 Victoriæ, cap. 33.—23rd August, 1887,

An Act to amend the Land Law (Ireland) Act, 1881, *and the Purchase of Land (Ireland) Act*, 1885, *and for other purposes connected therewith.*

Short Title: "Land Law (Ireland) Act, 1887."

PART I.—*Amendments of General Application.*

Section 1 enacts that at any time within two years after the passing of this Act on application, in the prescribed manner to the Court by the lessee of any holding who at the expiration of his lease existing at the passing of "The Land Law (Ireland) Act, 1881, would be deemed to be a tenant of a present ordinary tenancy from year to year within the meaning of the Act, at the rent and subject to the conditions of the lease, or would be so deemed but for the fact that such lease would not expire within sixty years after the passing of "The Land Law (Ireland) Act, 1881," such lessee shall, if bonâ fide in occupation of his holding, be deemed to be a tenant of a present tenancy in like manner as if his lease had expired, and his holding shall be subject to all the provisions of the said Act of 1881 with regard to present tenancies as if the tenancy therein were a tenancy from year to year. This section applies only to leases expiring within 99 years after the passing of "The Land Law (Ireland) Act, 1881," and every lease existing at the passing of "The Land Law (Ireland) Act, 1881," for any life or lives then existing, with or without any term of years not exceeding 99 years where such term is concurrent, or 31 years where such term is in reversion, and not being renewable in in any case, shall, for the purposes of this section, be deemed to be a lease so expiring. In case of a lessee becoming present tenant under this section, the court shall not for 15 years from the commencement of such present tenancy authorise resumption by the landlord. Section 2 provides for setting aside perpetuities. Section 3 makes exceptional provisions for certain leaseholders. Section 4 enacts that a tenant shall for the purpose of "The Land Law (Ireland) Act, 1881," and of this Act, be deemed to be in bonâ fide occupation of his holding notwithstanding that he has sublet part thereof, provided the subletting is for the use of a labourer or labourers bonâ fide employed and required for the cultivation of the holding. The land comprised in each such letting shall not exceed half an acre in extent. This section is not to apply to a subletting made by a tenant during a statutory term nor to a subletting made after the passing of this Act. Section 5 provides that judicial rents may commence on date of application to the court. Section 6 provides for the consolidation of proceedings in ejectment, and application for fair rent. Section 7 enacts that a written notice may be substituted for the execution of an ejectment. Such notice shall state truly the exact amount claimed by the plaintiff as payable for redemption and the place or places where and the person or persons to whom the same may be paid or tendered, and may be served after six weeks from the date of judgment, but not earlier unless the court shall permit, by the person

entitled to the possession of land under a judgment in ejectment for non-payment of rent. A copy of the notice is to be sent in a registered letter addressed to the tenant, and a summary of the notice posted by or on behalf of the landlord on a police barrack or court house in the district. Upon the determination of the tenancy by the service of such notice every person upon whom it is served shall thereupon be deemed to be a person put into possession as a caretaker, who may be removed from possession at any time after one month from the service of notice: or, at the expiration of the period of redemption, but not sooner, the possession of such land may be recovered by a writ of possession in the prescribed form under the judgment in ejectment for non-payment of rent. Save as provided by this Act, a judgment in ejectment for non-payment of rent of a holding where the rent does not exceed 100*l.* by the year, or where the plaintiff elects to take advantage of and proceed under this section, shall not be executed by a writ of possession after the passing of this Act; but shall issue in the same form and manner, &c., as if this section had not been passed. A person having the right to apply for a writ of restitution under the 70th or 71st sections of "The Landlord and Tenant Law Amendment Act (Ireland), 1860," 23 and 24 Vict., c. 154, may, within six months after the service of a notice under this section, apply for such writ as if a writ of possession had been executed against him. At the end of the period of six months from the service of the notice determining the tenancy all right of redemption in the holding shall be at an end. In case such writ of restitution of possession shall be awarded, the landlord shall not be liable or accountable for any damage or injury occurring to the holding or the crops or produce thereof after the service of the notice. The landlord may nevertheless after such period has elapsed, reinstate the tenant. The period of six months from the service of notice shall be in lieu of the period of six months from the execution of a writ of possession. Where a judgment in ejectment for non-payment of rent has been executed before the passing of this Act, the time within which a writ of restitution of possession may be applied for shall be the time limited by "The Landlord and Tenant Law Amendment Act (Ireland), 1860." A right to be registered as a voter or to vote at any parliamentary or other election shall not be affected by reason only of the service of a notice or notices under this section. Section 8 enacts that where a person (in this Act referred to as a middleman) pays rent for a holding (includes land held under a fee-farm grant) which is wholly sublet, and the rent received by the middlemen has been reduced by the court, or with the sanction of the court to a sum less than the rent which he pays, he may surrender his estate in such holding (by deed or note in writing) without prejudice, however, to any liability incurred by him before such surrender, whether for rent or for any other matter; also where only part of the holding is sublet, &c. In computing the amount of rent received by a person entitled to surrender under this section, 20 per cent. deduction from the gross rent shall be allowed for cost of collection and other outgoings. A person shall not be entitled to make a surrender under this section of an estate in land until he has first offered to the persons entitled to incumbrances on that estate, successively accord-

ing to their priorities, to assign his estate to them. When any estate in land is surrendered under this section, incumbrances on that estate shall not affect the land: but the persons entitled to such incumbrances may enforce payment thereof by any proceedings other than proceedings affecting the land, which they might have taken if such surrender had not taken place. The person to whom a surrender is proposed to be made shall not be bound thereby unless written notice of the intention to surrender be served within nine months after the passing of this Act, or within nine months after the making of the reduction of rent, upon which the right to surrender is founded, whichever shall last happen. He may also also apply to the court to restrain the surrender on the ground that it is inequitable. Where only part of a holding is sublet the court may determine the fair rent of the part not sublet. All sub-tenants of the person surrendering such estate shall become tenants to the person to whom such surrender is made at the rents and subject to the conditions of their sub-tenancies under the person so surrendering. Section 9 enacts that a holding shall not be deemed to constitute a town park, though within the definition of the expression "town parks" in section 58 of "The Land Law (Ireland) Act, 1881," if it is let and used as an ordinary agricultural farm. A town park shall not cease to be within the exemption contained in section 58 of the Land Law (Ireland) Act, 1881, by reason only of the occupier ceasing to live in the city or town to which it belongs, or in the suburbs thereof, or by reason only of such town park devolving upon or becoming vested in a person not living in such city or town or in the suburbs thereof. A parcel of land is not to come within the exemption by reason only of the occupier coming to live in the city, &c.

Part II.—*Purchase of Land.*

Section 10 enacts that a guarantee deposit made under the Purchase of Land (Ireland) Act, 1885, may, on the application of the person by whom the deposit was made, or of any person for the time being interested in it, be invested by the Land Commission in the same investments in which it might have been invested under the direction of the High Court, if it had been capital money arising under "The Settled Land Act, 1882," or in any securities in which trustees are by law for the time being authorised to invest trust moneys. Section 11 provides that trust funds may be applied as a guarantee deposit. Section 12 enacts that where the proceeds of a sale of any holding coming to an incumbrancer thereon in respect of his incumbrance are applied as a guaranteed deposit under the said Act, and the incumbrance is charged on several other estates such incumbrance shall to the extent of the moneys so applied as a guarantee deposit continue to be a charge on the other lands in the same priority as before the sale, with the consent of those in whom the incumbrances are vested. Section 13 provides that the Land Commission shall enforce arrears by action or civil bill process where there is reasonable probability of a debt being recoverable. Section 14 provides for expediting proceedings on sales. The Land Commission may by order declare that the claims of all persons (except the tenant and persons claiming under him) who are in-

terested in the land sold, whether as incumbrancers or otherwise, shall attach to the purchase money of such land in like manner as immediately before the sale they attached to the land and shall cease to be of any validity as against the land. Where the purchase money or any part of it is not immediately distributable, or the persons entitled thereto are not ascertained, &c., the Land Commission shall, as the case requires, either retain the same under their control or deal with the same in the manner provided by "The Settled Land Act, 1882," with respect to capital money arising under that Act. Any person in occupation of and paying rent for a holding which is held under a contract of tenancy, shall have power to enter into an agreement for the purchase thereof. Where a holding shall be conveyed to or vested in any such person, the interest thereby assigned to him shall be deemed to be a graft upon the previous interest of the tenant in such holding, and shall be subject to any rights or equities arising from its being such graft. Section 15 empowers the Land Commission to appoint any Crown rents, quitrents, and tithe rent-charges on other lands as well as land sold, between the land sold and the other lands. The Land Commission may, if they think it expedient, order the redemption of any Crown rent, &c., and of any land improvement charge or drainage charge or apportioned part thereof: but no such apportionment or redemption of Crown or quitrent shall be made without the previous consent of the Commissioners of Her Majesty's Woods, Forests, and Land Revenues; and no such apportionment or redemption of land improvement charge or of drainage charge payable to the Commissioners of Public Works, or redemption of tithe rent-charge payable to the Land Commission, shall be made without the previous consent of the Commissioners of the Treasury. When any such land sold is subject with other lands to any incumbrance as defined by this Act, the Land Commission may require the persons entitled to such incumbrance to accept the money advanced for the purchase of the land sold in part discharge of the incumbrance, and by order declare the land sold to be discharged of all incumbrances. Section 16 provides for the apportionment and redemption of annuities and charges. When the Land Commission exercise the power of apportionment conferred on them, the part of an annuity, rent-charge, or rent which is apportioned upon any land sold shall cease to be a charge upon the land, and shall be transferred to the purchase money thereof. The Land Commission shall, on the application of the person entitled to a part of an annuity, rent-charge, or rent, which part shall have been apportioned by them upon land sold, and may, if they think it expedient, without such application, order the redemption of such annuity, &c., and may. notwithstanding the fact that no apportionment has been made, order the redemption of any annuity, &c., affecting land sold, at a price to be fixed by agreement between the parties, or to be determined by the Land Commission, if the parties so consent, or if they do not consent, then to be settled by arbitration in the manner provided by the 25th section and the schedule of "The Landlord and Tenant (Ireland) Act, 1870." A person who is tenant for life of an estate in any annuity, &c., to which this section applies, or who has, as respects such annuity, rent-charge, or rent, the power of a tenant

for life within the meaning of "The Settled Land Act, 1882," shall be deemed to be a person entitled thereto. Section 17 limits advances by Land Commission to 5,000*l.* in all. Section 18 enacts that every advance made by the Land Commission under the Land Law (Ireland) Acts shall be secured by an order of the Land Commission declaring the land upon which such advance is made to be charged with the repayment of the advance with interest in such manner as the order may direct. Where any interest or instalment is in arrear the Land Commission may exercise all the powers of sale, &c., conferred on them by section 19, 21, 22, of 44 and 45 Vict., c. 41. Section 34 and sub-section 3 of 44 and 45 Vict. c. 49, are repealed. Section 19 empowers a judge of the High Court to reduce rents in certain cases, where an absolute order for a sale of land is made. Section 20 enacts that every annuity payable in respect of any advance made either before or after the passing of this Act to enable a tenant to purchase a holding under the Land Law (Ireland) Acts, shall be a charge on the holding subject thereto, having priority over all existing and future estates, interests, and incumbrances created either by the landlord or the tenant, or their respective predecessors in title, and whether before or after the making of the advance, with the exception of quitrent and other charges incident to the tenure, rent-charges in lieu of tithes, and any charges created under any Acts authorising advance of public money, or under any Act creating charges in respect of improvements on lands and passed before this Act, and with the exception also (in cases where lands are subject to a fee-farm rent or held under a lease reserving rent) of such fee-farm rent or rent reserved as aforesaid. Every such annuity payable to the Land Commission shall be payable in equal half-yearly payments on the first day of May and the first day of November in each year. Section 22 provides that when either before or after the passing of this Act a sale of a holding has been agreed to be made by a landlord to a tenant, and an application for an advance to enable the tenant to buy the holding has been sanctioned by the Land Commission, either party to the agreement for sale may apply in a summary manner to the Land Commission to decree the specific performance of the agreement. Section 23 amends sections 10 and 13 of 48 and 49 Vict. c. 73, by substituting the words "Land Commission," for the words "Land Judges," and extends the power of appointing new trustees to all cases in which it may be necessary to appoint new trustees for the purposes of any sale under the Land Law (Ireland) Acts. Section 24 reduces the interest on loans under 33 and 34 Vict. c. 46, sections 44, 45; 35 and 36 Vict. c. 32, s. 1, from 5 to 4 per cent, and provides that the annuity shall be payable for such term as seems good to the Commissioners of Works, at 3½ per cent. per annum, and the order of the Commissioners shall, as soon as may be after the passing of the Act, be made and notified by post or otherwise to the person appearing to them to be the person paying the annuity. The Commissioners may extend the term so that it does not in any case exceed 49 years from the date of the advance. Where on the gale day next after the passing of this Act there are unpaid arrears of instalments of the annuity in excess of the instalment due on the gale day, this section shall not apply to such annuity except upon such order of

the Commissioners of Her Majesty's Treasury. Where the Treasury are satisfied that it is equitable to apply the provisions of this section they may order that on payment within the time limited by the order of a portion of the arrears, not being less than the amount of the instalments of the annuity for six months, if so much be due, the remainder of the arrears shall be repayable by such addition to the amount of the annuity for repaying the advance as will repay the said remainder with interest at the rate of 3⅛ per cent. per annum within the period at which the last-mentioned annuity will, by virtue of this Act or otherwise terminate. Section 25 reduces the interest paid on mortgages held by the Irish Land Commission as successors of the Commissioners under 32 and 33 Vict. c. 42, and the Church Temporalities Commissioners, from 4 to 3⅛ per cent., and the term which the Irish Land Commission may vary if they think fit shall not exceed 49 years from the date of the mortgage. The annual amount payable to the Irish Land Commission in respect of any such mortgage shall be payable by half-yearly payments on the days on which the interest in the mortgage is payable, and for 49 years from the said day, and the mortgage shall then, except for the purpose of recovering arrears, determine. An order of the Irish Land Commission fixing the annual amount and the term of years shall, as soon as may be after the passing of this Act, be made and notified by post, or otherwise, to the person for the time being paying the interest on any simple, or the instalment on any instalment mortgage. Similar provisions are made for the payment of arrears as in section 24. Nothing in this section is to apply to a mortgage as to which an order has been made under section 23 of "The Purchase of Land (Ireland) Act, 1885," before the passing of this Act; or to apply to the purchasers of perpetuity rents. Section 26 empowers the Commissioners of Works to release forfeiture incurred by purchasers to whom money is advanced under 33 and 34 Vict., c. 46, sections 44, 45. Section 27 reduces interest on loans under 44 and 45 Vict, c. 49, from 5 to 4 per cent. on the amount of the advance, payable for such term as the Irish Land Commission shall declare necessary for repayment, with interest at 3⅛ per cent. Similar provisions are re-enacted in the remainder of the clause to those in clause 24. Section 28 enacts that where any sum is due to the Irish Land Commission or to the Commissioners of Public Works in respect of any advance made to, or purchase money due from, the purchaser of any land or interest in land, and is unpaid for the space of not less than six months after the same has become due, the Irish Land Commission or Commissioners of Public Works, as the case may be, may give a certificate of the amount so due, and such certificate shall be evidence in the same manner as a certificate under section 49 of "The Landlord and Tenant (Ireland) Act, 1870."

Part III.—*Equitable Provisions.*

Section 29 enacts that as soon as possible after the passing of this Act, the Land Commission, having regard to the difference in prices affecting agriculture in counties, poor law unions, or other areas, between the year 1887, and each of the years 1881—1885, shall

without application determine with reference to such counties, &c., what alteration, if any, ought equitably to be made in the judicial rents to become payable in such counties, &c., in respect of the year commencing from the gale day next before the passing of this Act, according as such judicial rents were fixed in one or other of the years before the 1st day of January, 1886, respectively, so that the rent fixed under the provisions of this section shall differ by the difference in prices in the respective years. In the years 1888 and 1889, the Land Commission shall, in like manner, determine what alteration, if any, ought equitably to be made in the judicial rents. A copy of every order made by the Land Commission under this section is to be published in the "Dublin Gazette," production of a printed copy of which shall be evidence of the contents of such order, and of the date thereof, and that it has been duly made. Section 30 gives the court power to stay eviction, where it is satisfied that the inability of the tenant does not arise from his own conduct, act, or default. Provided that where the landlord has offered to accept in full satisfaction of the arrears of rent such lesser sum, payable either in one payment or by instalments as the court shall think reasonable, and the tenant refuses such offer, no stay of execution shall be granted under this section. If the court is of opinion that the tenant can pay the first of such instalments forthwith, the court shall so order. If default is made in complying with the order of the court for the payment of the first or any subsequent instalment, the stay upon the execution of the judgment in ejectment shall be removed, and it may thereupon be executed by a writ of possession in the prescribed form; and upon the execution thereof, or upon the expiration of a period of six months from the recovery of the judgment, whichever shall last happen, all right of redemption in the holding shall be determined. This section applies to every holding in respect of which a judicial rent has been fixed, or can be fixed under "The Land Law (Ireland) Act, 1881," as amended by this Act, held by a tenant whose holding, or the aggregate of whose holdings, whether under one or more landlords, is valued under the Acts relating to the valuation of rateable property in Ireland at not more than 50*l.* a-year; and to judgments in ejectment for non-payment of rent, or for debt or damages recovered but not executed before the passing of this Act against the tenant of such holding. Where any such judgment for non-payment of rent so recovered shall be executed against any tenant, the court, may, notwithstanding, within three months after the passing of this Act, and under like conditions, and subject to like terms as to instalments and otherwise, as if the judgment had not been executed, make an order setting aside the execution, and, if necessary, restoring the tenant to the possession of the holding. Section 31 enacts that appeals shall be allowed from every decree, &c., of a county court judge exercising jurisdiction under this Act, as if the same were a decree pronounced by a county court judge in exercising ordinary civil bill jurisdiction under "The Civil Bill Courts (Ireland) Act, 1851," except where otherwise expressly provided. Section 32 empowers the Land Commission to appoint court valuers in county courts, subject to the approval of the Lord Lieutenant.

PART IV.—*Miscellaneous.*

Section 33 enacts that in the case of the High Court the powers of making rules, orders, &c., shall be from time to time exercised by "The authority and in the manner prescribed by the 61st section of the Supreme Court of Judicature Act (Ireland), 1877," 40 and 41 Vict., c. 57. In the case of the Land Commission, rules may be made in the manner provided by "The Land Law (Ireland) Act, 1881." In the case of the county court, these powers shall be exercised &c., as prescribed by section 79 of "The County Officers and Courts (Ireland) Act, 1877," 40 and 41 Vict., c. 56. The authority mentioned in the 84th section of "The County Officers and Courts (Ireland) Act, 1877," shall amend the existing scale of fees, costs, and charges to be paid to counsel, &c., so that the total fees, &c., shall, so far as may be practicable and reasonable, not exceed the total fees, &c., in ordinary civil bills. Section 34 defines the expression "ejectment" to mean any action for the recovery of the possession of land in the High Court of Justice or in the Civil Bill Court: "Judgment" as respects ejectment to mean decree of a civil bill court or a judgment of the High Court: "Writ of possession" to include a decree for possession: "Incumbrance" to mean any legal or equitable mortgage in fee, or for any less estate, and also any money secured by a trust, and also any legacy, portion, lien, or other charge, whereby a gross sum of money is secured to be paid on an event or at a time certain, and also any annual or periodical charge which, by the instrument creating the same, or any other instrument, is made purchasable on payment of a gross sum of money, and every other charge on land which is deemed an incumbrance in a court of equity, and which a court would discharge by a sale of the land charged, or by the appointment of a receiver over the same: "Landlord" for the purposes of sales to tenants under the Land Law (Ireland) Acts, to include any person entitled to an estate as a trustee for sale, and any limited owner, as defined by section 33 of "The Landlord and Tenant (Ireland) Act, 1870," 33 and 34 Vict., c. 46: "Tithe rent-charge" to include any annual sum payable to the Land Commission under the 32nd section of "The Irish Church Act, 1869," 32 and 33 Vict., c. 42, as amended by any Act or Acts: "Land improvement charge" to include any charge for land improvement loans payable to the Commissioners of Public Works in Ireland under 10 and 11 Vict., c. 32: "Drainage charge" to include any charge for drainage loans payable to the said Commissioners under the same Act and Acts amending it, or under 5 and 6 Vict., c. 89; and also any charge payable to the drainage board of a drainage district under 26 and 27 Vict., c. 88, and the Acts amending the same: Save in Part II of this Act, "holding" does not include any holding which is not agricultural or pastoral or partly agricultural and partly pastoral, in its character: "Prescribed," when used with reference to proceedings before the Land Commission, to mean prescribed by rules made under "The Land Law (Ireland) Act, 1881;" when used with reference to other proceedings, to mean prescribed by rules made under "The Supreme Court of Judicature Act (Ireland), 1877" as amended by this or any other Act, or under "The County Officers and Courts (Ireland) Act, 1877," as the case may be: "The Land Law (Ireland) Acts" to in-

clude "The Landlord and Tenant (Ireland) Act, 1870," "The Land Law (Ireland) Act, 1881," Part II. of "The Tramways and Public Companies (Ireland) Act, 1883, "The Purchase of Land (Ireland) Act, 1885," and any Act amending them.

[50 & 51 Victoriæ, cap. 48.—16th September, 1887.]

An Act to facilitate the provision of Allotments for the Labouring Classes.

Short Title: "The Allotments Act, 1887."

Section 2 provides that on a representation in writing by any six registered Parliamentary electors or ratepayers the sanitary authority of the district shall, if satisfied there is a demand for allotments, acquire land for the purpose. Section 3 incorporates 38 & 39 Vict., c. 55, and 8 & 9 Vict., c. 18 with this Act. If land cannot be acquired at a reasonable price, &c., the provisions of "The Lands Clauses Consolidation Act, 1845," shall be applied. Section 5 provides for the improvement of any land acquired by a sanitary authority. Section 6 enacts that the sanitary authority may from time to time make, &c., all necessary regulations for the management of allotments which shall be binding on all persons whatsoever. Section 7 provides that the rents shall be fixed at an amount not less than such as may reasonably be expected to ensure the sanitary authority from loss, who for the purposes of all rates, taxes, &c., shall be deemed to be the occupier of the allotments which are let. No one person shall hold any allotment or allotments exceeding one acre, and an allotment shall not be sub-let: no building other than a toolhouse, shed, greenhouse, fowlhouse, or pigstye, shall be erected. Section 8 empowers the sanitary authority to recover rents like landlords. Section 9 provides for the election of allotment managers on petition of not less than one-sixth of the whole number of electors. Section 11 empowers the sanitary authority to sell superfluous or unsuitable land. Section 12 provides for the acquisition by the sanitary authority of land for common pasture if desirable, and extends the regulations made under this Act to regulating the common pasture. Section 13 enacts that the allotment wardens under "The Inclosure Act, 1845," may transfer the management of land appropriated under that Act and Acts amending it to the sanitary authority. Section 15 provides that a register shall be kept by the sanitary authority showing the particulars of the tenancy, acreage, and rent of every allotment let, and of unlet allotments; such register to be open to the inspection of the ratepayers of the district. Allotment is defined to include a field garden: sanitary authority to mean the urban sanitary authority of an urban district, and the rural sanitary authority of a rural sanitary district: the expression "land" to include pasture, arable, and other land, and any right of way or easement. The Act does not apply to Scotland or Ireland.

5. LAW AND JUSTICE.

[50 & 51 Victoriæ, cap. 20.—19th July, 1887.]

An Act to make better Provision for the Prevention and Punishment of Crime in Ireland, and for other purposes relating thereto.

Short Title: "Criminal Law and Procedure (Ireland), Act, 1887."

Preliminary Inquiry.

Section 1 enacts that where a sworn information has been made that any offence to which the section applies has been committed in a proclaimed district, the Attorney-General for Ireland may, if he think fit, by order in writing under his hand, direct a resident magistrate, of whose legal knowledge and legal experience the Lord Chancellor shall be satisfied, to hold an inquiry, and, if he think fit, although no person may be charged before him with the commission of such crime, sit at a police court, when the offence has been committed in Dublin, or at the place where the petty sessions for the petty sessional district in which the offence has been committed are usually held, and examine on oath any person whom he has reason to believe to be capable of giving material evidence concerning the offence, other than any person confessing himself or herself to be the offender or the husband or wife of such person, and shall take the deposition of such witness, provided that no sitting of any inquiry shall commence except between the hours of 10 a.m. and 6 p.m., that a shorthand writer shall be in attendance, and take down the questions of the magistrate, and the answers of each witness, which shall be annexed to the deposition of the witness: and that any accused person on being returned for trial, or his solicitor, shall forthwith be supplied with copies of all depositions taken at the inquiry. The enactments contained in "The Petty Sessions (Ireland) Act, 1851," 14 & 15 Vict., c. 93, section 13, relating to the compelling of the attendance of a witness before a justice, &c., are to apply for the purposes of this section as if they were re-enacted in terms made applicable thereto: Provided, that in case a warrant shall be issued for the arrest of any witness in the first instance, and without any summons having previously been served and disobeyed, such witness shall, on demand, be entitled to receive from the resident magistrate holding the inquiry a copy of the information or complaint on which the warrant for his arrest was issued. Where a witness, examined at an inquiry, is under the age of twelve years, the parent or guardian, or the relative or friend with whom the witness usually resides, shall be entitled to attend. None but the resident magistrate holding an inquiry shall question or examine any witness. A witness shall not be excused from answering any question on the ground that the answer may criminate, or tend to criminate, himself: Provided that a witness who answers truly all questions which he is required to answer, shall be entitled to a certificate under the hand of the magistrate making such examination, stating that he has so answered, and such a certificate shall be a bar to all criminal proceedings against such witness in respect of any offence, not being a felony, as to which he has been

examined; and any confession or answer by a person shall not, except in the case of any criminal proceeding for perjury committed at or after the holding of such inquiry, be, in any proceeding, civil or criminal, admissible in evidence against such person, or the husband or wife of such person; Provided that if any person has been charged with the commission of the crime, no witness, while the charge is pending, shall be compelled to answer who has been called to give evidence for the defence of such accused person. No person other than the magistrate and other official person shall be present at the inquiry. A magistrate who conducts the examination shall not, if such offence is punishable on summary conviction, take part in the hearing, &c. Any interpreter who is employed shall not be a police-man. The offences to which this section applies are any felony or misdemeanor, and any offence punishable under this Act, committed in a proclaimed district, whether committed before or after the passing of this Act, provided that no inquiry shall be held concerning any such offence committed in any district before the proclamation of such district, unless such offence would have been indictable if this Act had not passed, and unless such offence was committed since the expiry of "The Prevention of Crime (Ireland) Act, 1882," 45 & 46 Vict., c. 25.

Summary Jurisdiction.

Section 2 provides for the prosecution before a court of summary jurisdiction (1) any person who shall take part in any criminal conspiracy now punishable by law to compel or induce any person or persons either not to fulfil his or their legal obligations, or not to let, hire, use, or occupy any land, or not to deal with, work for, or hire any person, &c., in the ordinary course of trade, business, or occupation; or to interfere with the administration of the law; (2) any person who shall wrongfully and without legal authority use violence or intimidation (*a*) to or towards any one with a view to cause them either to do any act which they have a legal right to abstain from doing, or to abstain from doing any act which they have a legal right to do; or (*b*) to or towards any person or persons in consequence either of having done or having abstained from doing any act, &c.; (3) (*a*) any person who shall take part in any riot or unlawful assembly; or (*b*) within twelve months after the execution of any writ of possession of any house or land shall wrongfully take or hold forcible possession of such house, &c., or any part thereof; or (*c*) shall assault, or wilfully and unlawfully resist or obstruct, any sheriff, &c., or other minister of the law, while in the execution of his duty, in consequence of such execution: (4) any person who shall incite any other person to commit any of the offences mentioned.

Special Jury and Removal of Trial.

Section 3 enacts that where an indictment for a crime committed in a proclaimed district has been found against a defendant, or a defendant has been committed for trial for such crime, and the trial is to be by a jury before a court in Ireland other than a court of quarter sessions, the High Court shall on an application by or on

behalf of the Attorney-General for Ireland or a defendant make an order, as of course, that the trial shall be by a special jury. Section 4 provides that where an indictment for a crime committed in a proclaimed district has been found, or a defendant has been committed for trial, and the trial is to be at a court of assize, or at a court of quarter sessions for any county in a proclaimed district, the High Court on an application by or on behalf of the Attorney-General for Ireland, and upon his certificate that he believes that a more fair and impartial trial can be had at a court of assize in some county to be named in the certificate, shall change the place of trial accordingly. Any defendant may within the prescribed time apply to the High Court to discharge or vary any such order, upon the ground that the trial can be more fairly and impartially had in a county other than the county named in the order of removal; if the court discharges or varies any such order, it shall award that the reasonable costs incurred by the defendant in making the application shall be paid by the Crown.

Proclamation of Districts.

Section 5 empowers the Lord Lieutenant, by and with the advice of the Privy Council, from time to time to proclaim any districts for the purposes of the preceding enactments. But this section shall not apply to the provisions of this Act relating to dangerous associations. When any of the provisions of section 2 of this Act, relating to summary jurisdiction, are declared by proclamation to be in force in a district, they shall apply to offences committed in the district after the passing of this Act, whether before or after the date of the proclamation; and when the provisions of section 3 or section 4, relating to special juries or change of place of trial, are declared by proclamation to be in force in a district, they shall apply to crimes committed in the district before or after the passing of this Act.

Dangerous Associations.—Arms.

Section 6 enacts that if the Lord Lieutenant is satisfied that any association—(*a*) formed for the commission of crimes (any felony or misdemeanour, and any offence punishable under the Act); or (*b*) carrying on operations for or by the commission of crimes; or (*c*) encouraging or aiding persons to commit crimes; or (*d*) promoting or inciting to acts of violence or intimidation; or (*e*) interfering with the administration of the law or disturbing the maintenance of law and order, exists in any part of Ireland, he may from time to time by proclamation declare to be dangerous any association or associations named in such proclamation, which is in this Act referred to as a special proclamation. A copy of every special proclamation shall be laid before each House of Parliament within seven days after the making thereof, if Parliament is then sitting, and if not, then within seven days after the next meeting of Parliament. If within a period of fourteen days after a special proclamation has been laid before Parliament an address is presented to Her Majesty by either House, praying that it shall not continue in force as to an association or associations named or described therein, it shall be deemed to have expired so far as it relates to such association or associations. When-

ever any special proclamation is issued, if Parliament be then separated by such adjournment or prorogation as will not expire within twenty days, such proclamation shall be deemed to have expired at the end of a week from the date thereof, unless during that week Parliament shall be summoned to meet within twenty days from the date of the summons. When a proclamation expires or is revoked, the powers conferred by the seventh section of the Act for the time being cease to be in force in respect of the association, &c., as to which the proclamation has expired, &c. Section 7 enacts that after the date of such special proclamation and as long as the same continues unrevoked or unexpired, the Lord Lieutenant in Council may prohibit or suppress in any district specified in the order any association named, &c., in the proclamation, or any association which appears to him to be dangerous; every person calling together a meeting of such association in the specified district, or of any members thereof as such members, or knowingly taking part in any such meeting, or publishing with a view to promoting the objects of such association any notice of the calling together of any such meeting, or of the proceedings at such meeting, or contributing or receiving or soliciting in the specified district any contribution for the purposes of such association, or in any way taking part in the proceedings thereof in the specified district, or of any branch or meeting of it in such district, shall be guilty of an offence and may be prosecuted before a court of summary jurisdiction under this Act. Section 8 continues "The Peace Preservation (Ireland) Act, 1881," as amended by "The Peace Preservation (Ireland) Continuance Act, 1886," for five years from the passing of this Act and until the end of the then next session of Parliament. A warrant under the Act directing a search for arms or ammunition in houses, buildings, or places in a proclaimed district as defined by the Act shall be valid in law, notwithstanding that the houses, &c., are not specified further than as being houses, &c., situated in a specified townland or municipal ward.

Provisions as to Special Jury, and Removal of Trial.

Section 9 provides that any special jury shall be sworn like ordinary juries in the manner provided by the nineteenth section of "The Juries Procedure (Ireland) Act, 1876." Section 10 enacts that if an order for the removal of the trial of a crime to any county in Ireland has been made before the indictment is found, such crime may be inquired of by a grand jury, &c., in the county named in the order of removal just as if the crime had been committed in such county, and if the order is made after the indictment is found, the crime may be heard and determined as if the indictment had been found in the court to which the trial is removed. In either case the defendant may be convicted and sentenced as if the crime had been committed in the county named in the order of removal.

Punishment, Procedure, and Definitions.

Section 11 enacts that a person convicted before a court of summary jurisdiction under this Act shall be liable to imprisonment with or without hard labour for a term not exceeding six months, and shall

have the same right of appeal as he would have under the Summary Jurisdiction Acts in the case of any other summary conviction. If any person licensed under the Acts relating to intoxicating liquors, is convicted under this Act, such conviction shall be entered in the proper register of licences, and may be directed to be recorded on the licence of the offender in the same manner, and shall have the same effect, as if the conviction were for an offence against those Acts. The court of summary jurisdiction shall within the police district of Dublin metropolis, be a divisional justice of that district, and elsewhere be two resident magistrates in petty sessions, one of whom shall be a person of the sufficiency of whose legal knowledge the Lord Lieutenant shall be satisfied, and the expression "resident magistrate" means a magistrate appointed in pursuance of the Act of the session of the 6 & 7 Will. IV, c. 13, intituled "An Act to consolidate the laws relating to the constabulary force in Ireland." One resident magistrate may act alone in adjourning or postponing a court, or in doing any other thing antecedent to the hearing of a charge under this Act. In hearing, &c., at any quarter sessions an appeal under this Act, the county court judge and chairman of quarter sessions or the recorder shall sit and act as sole judge. Subject to rules of the High Court any jurisdiction vested in the High Court shall be exercised by the Queen's Bench Division. Section 12 provides for the publication of every proclamation in the "Dublin Gazette," the production of which containing the publication of any proclamation, &c., shall be conclusive evidence of the contents of such proclamation, &c. A copy of every proclamation, not being a special proclamation, shall be laid before each House of Parliament within fourteen days after the making thereof, if Parliament is then sitting, and if not within fourteen days after the next meeting of Parliament. Section 13 provides that the Lord Lieutenant, &c., may revoke any proclamation, &c., under this Act, and a copy of each such further proclamation shall be laid before Parliament within fourteen days, &c. Section 14 provides for allowances to witnesses and others. Section 15 enacts that the Lord Lieutenant may, from time to time, &c., make and when made revoke, add to, and alter rules, where a special jury is required, or where a trial is removed to any county in Ireland, in relation to the attendance, authority, and duty of sheriffs, gaolers. officers, and persons, the removal and custody of prisoners, the alteration of any writs, precepts, indictments, recognisances, proceedings, and documents, the transmission of indictments, recognisances, and documents, and the expenses of witnesses and the carrying of sentences into effect; also, in the case where a special jury is required, the number of jurors to be returned on any panel; and in the case of the removal of a trial to a court of assize for a county in Ireland, in relation to due provision being made for the advance of money to defray the necessary costs of the defence, so far as they are occasioned by the removal; in relation to forms for the purposes of this Act, and to any matter by this Act directed to be prescribed; and in relation to any matters which appear to the Lord Lieutenant to be necessary for carrying into effect the provisions of this Act; section 16 provides that the power of the Act shall be cumulative, provided that no person shall be punished twice for the same offence.

Section 17 enacts that the expiration or revocation of any proclamation shall not affect the validity of anything previously done under the Act. Section 18 enacts that an agreement or combination which, under "The Trade Union Acts, 1871 and 1876," or "The Conspiracy and Protection of Property Act, 1875," is legal, shall not, nor shall any act done in pursuance of any such agreement, &c., be deemed to be an offence against the provisions of this Act respecting conspiracy, intimidation, and dangerous associations. Section 19 defines the expression "county" to include a county of a city and a county of a town. The expression "court of assize" to mean a court created by a commission of assize, of oyer and terminer, and of gaol delivery, or any such commissions. The expression "Attorney-General" to mean the Attorney-General acting on behalf of the Crown, and to include, in the case of any vacancy in office or inability to act, the Solicitor-General so acting. The expression "the Summary Jurisdiction Acts" to mean in the Dublin Metropolitan Police District the Acts regulating the powers and duties of justices of the peace and of the police in that district, and elsewhere in Ireland, "The Petty Sessions (Ireland) Act, 1851," and the Acts amending it. The expression "intimidation" to include any words or acts intended and calculated to put any person in fear of any injury or danger to himself, or to any member of his family, or to any person in his employment, or in fear of any injury to or loss of property, business, employment, or means of living. "The High Court" to mean the High Court of Justice in Ireland.

[50 Victoriæ, sess. 2, cap. 9.—23rd May, 1887.]

An Act to remove the Disabilities of the Police to vote at Parliamentary Elections.

Short Title: "Police Disabilities Removal Act, 1887."

The preamble recites the inexpediency of any person otherwise entitled to be registered as a voter being incapacitated to vote at Parliamentary elections by reason of his being employed in or in connection with the police. Section 1 repeals part of s. 18 of 10 Geo. IV, c. 44; part of s. 9 of 2 & 3 Vict., c. 93; part of s. 8 of 2 & 3 Vict., c. 94 (Private); part of s. 9 of 19 & 20 Vict., c. 2; part of s. 9 of 19 & 20 Vict., c. 69; part of s. 5 of 23 & 24 Vict., c. 135; and part of s. 17 of 20 & 21 Vict., c. 72, relating to Scotland. Section 2 enacts that where a constable is or is likely to be, on the day of any election, sent or employed in the discharge of his duty so as to prevent him voting at the polling booth or station at which he would otherwise be entitled by law to vote, he may at any time within seven days before the election, apply for a certificate to the chief constable, who shall thereupon give a certificate under his hand, stating the name, &c., of the constable, and the fact that he is so sent or employed. The presiding officer at any polling booth or station shall, on production by the constable of the certificate, allow him to vote at that booth or station, and shall forthwith cancel the certificate. "Constable" is defined to include any person belonging to a police force; and "chief constable" to include an assistant chief constable, a commissioner or assistant com-

missioner of police, a head constable, and any other person for the time being in command of a police force, or acting in that capacity. Section 3 provides that a person otherwise entitled to be registered as a voter at Parliamentary elections in respect of the occupation of a dwelling house shall be deemed an inhabitant occupier thereof as tenant notwithstanding his temporary absence therefrom in the execution of duty as a police officer during a part of the qualifying period, not exceeding four consecutive months. Section 4 enacts that section 9 of the Act, 19 & 20 Vict., c. 2, shall be read and construed as if for the word "therein," were substituted the words "in certain elections of members to serve in Parliament." Provided always, that this Act shall not operate to extend the benefit of the 8th section of "The Corrupt Practices Prevention Act, 1854," to any person becoming entitled to vote by virtue of this Act.

ABSTRACTS OF PARLIAMENTARY AND OTHER OFFICIAL DOCUMENTS.

1. FINANCE, TAXATION, AND CURRENCY.

National Revenue and Expenditure.

The following tables show the PUBLIC INCOME and EXPENDITURE of the United Kingdom in the year ended 31st March, 1887:—

SOURCES OF REVENUE:—	£
Customs	20,155,000
Excise	25,250,000
Stamps	11,830,000
Land tax	1,070,000
House duty	1,910,000
Property and Income Tax	15,900,000
Post Office	8,450,000
Telegraph Service	1,830,000
Crown Lands	370,000
Interest on Advances for Local Loans	952,119
Interest on Sardinian Loan, Loan for Cape Railway, and Purchase Money of Suez Canal Shares	224,073
Miscellaneous	2,831,566
Total Income	£90,772,758
Income for year estimated in Budgets	£88,135,000

BRANCHES OF EXPENDITURE:—	£
Consolidated Fund Services—	
Permanent Charge of Debt	27,366,367
Funded and Unfunded Debt, created for Local Loans	377,712
Suez Canal Exchequer Bonds	199,944
Cape Railway Bonds	14,000
Other Consolidated Fund Charges	1,743,891
Total Permanent Charge of Debt	£29,701,914
Supply Services—	
Army	18,429,272
Navy	13,265,401
Miscellaneous Civil Services	17,826,454
Customs and Inland Revenue (Collection)	2,676,918
Post Office	5,436,893
Telegraph Service	1,935,000
Packet Service	724,900
Total Ordinary Expenditure	£89,996,752
Excess of Income over Expenditure	£ 776,006

Customs, Excise, and Stamps.

The following tables give the Net Produce from CUSTOMS, EXCISE, and STAMPS during the year ended 31st March, 1887.

Customs.

Articles usually contributing not less than £1,000 Annually.	Net Produce. £	s.	d.
Beer, Mum, and Spruce.	2,615	14	6
—— Of other Sorts . .	7,356	9	0
Chicory	66,161	11	3
Cocoa, Cocoa Husks, and Chocolate . .	73,558	14	10
Coffee	190,033	16	10
Currants	311,478	1	7
Figs	37,080	16	1
Plate, Gold and Silver .	9,037	14	5
Plums, Dried or Preserved, French Plums and Prunelloes . .	5,220	2	6
Prunes	7,069	17	1
Raisins	165,841	10	9
Spirits, Colonial and Foreign:—			
Rum	1,958,478	9	0
Brandy	1,351,851	17	4
Geneva	124,318	4	2
Of other sorts . . .	784,622	4	6
Tea	4,514,874	2	8
Tobacco and Snuff . .	9,367,185	9	8
Wine	1,128,073	5	6
All other Articles . . Loss on Light Gold	1,991	10	0
Charges on deliveries from the Bonded Warehouses . . .	33,098	9	10
Moneys deposited and not appropriated to goods	1,621	4	5
	£20,138,326	17	1
Duties collected at the Isle of Man . . .	2,472	6	1
Total Customs .	£20,135,854	11	0
Total, 1886 . .	£19,722,302	3	0

Excise.

	Net Produce. £	s.	d.
Beer	8,495,653	9	5
Railways	316,969	6	8½
Spirits	12,852,766	3	4
Chicory	2,061	8	4
Tobacco, home-grown .	14	14	0
Coffee Mixture Labels .	3,212	4	0
Warehouse rent and charges on delivery from Bond Warehouses, &c. . . .	911	17	11¼
Licences, viz.:			
Auctioneers, Appraisers, &c.	79,547	0	0
Beer and Cider, and Beer and Wine . .	186,263	14	3¼
Brewers	21,021	6	0
Dog	346,932	6	0
Establishment, viz.:			
Armorial Bearings .	74,953	4	0

EXCISE DUTIES, contd.	Net Produce. £	s.	d.
Carriages	545,122	19	0
Male Servants . .	135,407	5	0
Game	174,695	0	0
Gold and Silver Plate .	48,059	7	3
Gun	82,035	0	0
Hawkers and Pedlars .	26,686	10	0
Medicine Vendors . .	5,224	10	0
Pawnbrokers . . .	35,580	0	0
Refreshment House .	6,878	18	10½
Spirits:			
Distillers and Rectifiers	4,180	10	0
Dealers	119,893	2	3
Publicans, including Grocers in Scotland and Ireland . . .	1,487,013	19	9¼
Tobacco	84,818	11	4¼
Wine and Sweets . .	67,356	3	6¾
Other than the foregoing	9,624	8	5¼
Total Excise . . .	£25,212,882	19	6½
Total, 1886 . .	£25,441,921	13	10

Stamps.

The following table gives the net receipts from Stamps in the United Kingdom during the year ended the 31st of March, 1887:—

Heads of Duty.	Net Produce. £	s.	d.
Probate and Account Duty.	4,026,469	3	1
Legacy Duty	2,560,724	13	0
Succession Duty . . .	814,763	11	5
Total Probate and Legacy, &c., Duties	7,401,957	7	6
Corporation Duty. . .	34,063	5	3
Deeds and other Instruments, not included under the following heads . . .	2,006,565	12	7
Bills of Exchange . .	641,399	0	3
Receipts, Drafts, and other 1*d.* Stamps .	978,571	4	3
Bankers' Notes. . . .	120	0	0
Composition for the Duties on the Bills and Notes of the Banks of England and Ireland, and of Country Bankers .	123,539	14	10
Cards	15,672	15	9
Gold and Silver Plate, viz.:			
Gold	22,106	15	4
Silver	50,756	4	0
Licences and Certificates	156,394	0	0
Life Insurances . . .	39,654	6	4
Marine Insurances . .	130,025	7	2
Medicines (Patent) . .	179,507	14	1½
Total Stamps . .	£11,780,333	7	4½
Total, 1886 . . .	£11,600,914	7	5½

Fee and Patent Stamps.

Heads of Duty.	Net Receipts. £	s.	d.
Admiralty Court (Ireland)	272	3	6
Bankruptcy Court (Ireland)	3,726	4	0
Chancery Fund (Ireland)	659	17	8
Civil Service Commission	11,001	4	6
Colonial Stock Act.	20	0	0
Companies Registration	35,175	5	0
County Courts (Ireland)	30,357	10	0
Courts of Survey—Merchant Shipping	11	10	0
Crofters Commission (Scotland)	115	5	6
Crown Office in Chancery	5,715	0	2
District Audit	29,211	10	0
Judgments Registry Fund (Ireland)	3,368	2	6
Judicature (England)	365,586	3	2
" (Ireland)	37,532	3	5
Land Commission (England)	4,200	2	3
Land Commission (Ireland)	1,372	7	10
Land Registry (England)	788	6	9
Law Courts (Scotland)	5,024	4	6
London Gazette	18,924	8	3
Lord Chancellor's Presentation	581	0	0
Newspaper Registration	409	10	0
Police Courts (Metropolis)	9,194	12	0
Public Record	862	11	6
Railway Commission	235	6	0
RegisterHouse (Scotland)	34,744	12	10
Registration of Deeds (Ireland)	11,870	0	6
Total Fee Stamps	£610,959	1	10
Patents for Inventions, &c.	105,682	3	5
Total Fee and Patent Stamps	716,641	5	3
Total, 1886	£703,496	15	5

National Debt.

NATIONAL DEBT FROM 1872 TO 1887.—The following table shows the total amount of the National Debt at the end of each financial year, 1872 to 1887:—

Financial Years ended 31st March	Funded Debt. Capital of Unredeemed Funded Debt, inclusive of Unclaimed Stock and Dividends.	Funded Debt. Estimated Capital of Terminable Annuities (Computed in 3 per Cent. Stock), at Par.	Amount of Unfunded Debt.	Total Amount of National Debt, inclusive of Unclaimed Stock and Dividends.
	£	£	£	£
1872	731,756,962	49,013,769	5,155,100	785,925,831
1873	727,374,082	47,018,928	4,829,100	779,222,110
1874	723,514,005	44,941,333	4,479,600	772,934,938
1875	714,797,715	48,908,742	5,239,300	768,945,757
1876	713,657,517	45,847,366	11,401,800†	770,906,683
1877	712,621,355	43,449,568	13,943,800†	770,014,723
1878	710,843,007	40,705,718	20,603,000†	772,151,725
1879	709,430,593	37,664,369	25,870,100†	772,965,062
1880	710,476,359	33,784,649	‡27,344,900†	771,605,908
1881	709,078,526	34,988,435	22,077,500†	766,144,461
1882	*709,498,547	33,181,875	*18,007,700†	760,688,122
1883	*712,698,994	27,570,876	*14,185,400†	754,455,270
1884	‖640,631,095	‖91,682,269	14,110,600†	746,423,964
1885	640,181,896	86,115,658	14,033,100†	740,330,634
1886	638,849,693	85,829,917	17,602,801†	742,282,411
1887	637,637,640	81,123,148	17,517,900	736,278,688

* Under the National Debt Act, 1881, Bonds amounting to 7,750,000*l.* were converted into 8,603,006*l.* Stock.

† Including outstanding Exchequer Bonds issued for raising money for the purchase of Suez Canal shares. In 1886 these amounted to 3,359,000*l.*

‡ Including 1,000,000*l.* borrowed in aid of Ways and Means.

‖ In the course of the financial year 1883–4, 70,241,908*l.*, three per cent. Stock was converted into Terminable Annuities under the provisions of the National Debt Act, 1883.

Terminable Annuities.

	£	s.	d.
(1.) Annuities for Life and Terms of Years (per 29 Geo. 3, c. 41; 48 Geo. 3, c. 142; 10 Geo. 4, c. 24; 3 Will. 4, c. 14; 7 & 8 Vict. c. 83; 16 & 17 Vict. c. 45; 27 & 28 Vict. c. 43; 45 & 46 Vict. c. 51):			
(*a.*) Life Annuities	1,051,871	1	1
(*b.*) Annuities for Terms of Years . .	30,034	6	0
(*c.*) Exchequer Annuities	880	6	4
	1,082,785	13	5
On account of short issue of Life Annuities, on 5th April, 1853	5,000	0	0
(2.) Red Sea and India Telegraph Company's Annuity, expiring 4th August, 1908, per 25 & 26 Vict. c. 39	36,000	0	0
(3.) Annuities created by the National Debt Act, 1883, 46 & 47 Vict. c. 54:			
(*a.*) Converted Annuities expiring in 1904, and representing Annuities which were to cease in 1885, and were prolonged (Section 2), viz.:			
Trustee Savings Banks, expiring 15th February, 1904 . . . . . £ 362,104			
Post Office Savings Banks, expiring 22nd February, 1904 321,918			
	684,022	0	0
(*b.*) Chancery Funds Annuity, expiring 5th July, 1904 (Section 3), payable half-yearly	2,665,835	0	0
(*c.*) Three Savings Banks Annuities of 1,200,000*l.*, each expiring in 1889, 1893–4, and 1899, respectively, commonly called the "Rolling Annuities" (Section 2) . . .	3,600,000	0	0
(4.) Other Annuities:			
(*a.*) Sinking Fund Annuity, created in 1853 to extinguish nominal increase to capital of Debt caused by the conversion of 3 per Cent. Stock into 2½ per Cent. Stock, and expiring 1894 (33 & 34 Vict. c. 71, s. 69	6,906	14	7
(*b.*) Trustee Savings Banks Deficiency Annuity, created in 1881, and expiring 1908, 43 & 44 Vict. c. 36, payable half-yearly	83,672	12	0
(*c.*) Annuity created in 1883, in consideration of the cancellation of Consols and creation of similar amount of 2½ per Cent. Stock, expiring in 1903 (26 Vict. c. 14; 46 & 47 Vict. c. 54; and 47 Vict. c. 2)	35,121	0	0
(*d.*) Sinking Fund Annuity, created in 1884 to extinguish nominal increase to capital of Debt, caused by the conversion of 3 per Cent. Stock into 2¾ and 2½ per Cent. Stock, expiring in 1934 (47 & 48 Vict. c. 23, s. 3) . .	15,547	5	0
Total Terminable Annuities	£8,214,890	5	0

The total funded Debt on 31st March, 1886, was 638,849,693*l.*; on 31st March, 1887, 637,637,640*l.*

Rates of Income Tax 1846–1887.

Year.	Rate.	Year.	Rate.	Year.	Rate.
	s. d.		s. d.		s. d.
1846–7.. ..	0 7	1860–1.. ..	0 10	1874–5.. ..	0 2
1847–8.. ..	0 7	1861–2.. ..	0 9	1875–6.. ..	0 2
1848–9.. ..	0 7	1862–3.. ..	0 9	1876–7.. ..	0 3
1849–50 ..	0 7	1863–4.. ..	0 7	1877–8.. ..	0 3
1850–1.. ..	0 7	1864–5.. ..	0 6	1878–9.. ..	0 5
1851–2.. ..	0 7	1865–6.. ..	0 4	1879–80 ..	0 5
1852–3.. ..	0 7	1866–7.. ..	0 4	1880–1.. ..	0 6
1853–4.. ..	0 7	1867–8.. ..	0 5	1881–2.. ..	0 5
1854–5.. ..	1 2	1868–9.. ..	0 6	1882–3.. ..	0 6½
1855–6.. ..	1 4	1869–70 ..	0 5	1883–4.. ..	0 5
1856–7.. ..	1 4	1870–1.. ..	0 4	1884–5.. ..	0 5
1857–8.. ..	0 7	1871–2.. ..	0 6	1885–6.. ..	0 8
1858–9.. ..	0 5	1872–3.. ..	0 4	1886–7.. ..	0 8
1859–60 ..	0 9	1873–4.. ..	0 3	1887–8.. ..	0 7

Notes.—(*a*). From 1853-4 to 1862-3 a lower rate was charged on incomes from 100*l.* to 150*l.* as follows:—1853-4 at 5*d.*; 1854-5 at 10*d.*; 1855-6 at 11½*d.*; 1856-7 at 11½*d.*; 1857-8 at 5*d.*; 1858-9 at 5*d.*; 1859-60 at 6½*d.*; 1860-61 at 7*d.*; 1861-2 at 6*d.*; and 1862-3 at 6*d.* From 1863 to 1876 incomes under 100*l.* were free of taxation, and there was only one rate for all incomes above that sum, with abatement of 60*l.* on incomes under 200*l.* from 1863 to 1871, and of 80*l.* on incomes under 300*l.* from 1872 to 1875. In 1876 the point of exemption was raised to 150*l.*, and incomes below that amount have since been free of income tax, while for all incomes under 400*l.* no tax is paid upon the first 120*l.*

Local Taxation.

The following table shows the amount of the rates levied for the purposes of local expenditure in England and Wales in the year 1884-5, the latest period for which the returns are given in the Statistical Abstract:—

	£
Poor Rates, exclusive of Precept Rates	8,350,346
School Board Rates	2,207,807
Metropolitan Board of Works	759,714
Vestries or District Boards, exclusive of Precept Rates	1,597,506
Corporation and Commissioners of Sewers of the City of London, exclusive of Precept Rates	291,926
Metropolitan Police	675,266
Municipal Borough, exclusive of Precept Rates	1,263,102
Quasi Municipal Authorities:—	
Local Boards	—
Improvement Commissioners.	—
Urban Sanitary Authorities	6,829,738
Rural Sanitary Authorities	321,818
Lighting and Watching under 3 & 4 Will. 4, c. 90.	22,807
County Treasurers	1,554,477
Burial Boards	142,046
Highway Boards	1,904,749
Commissioners of Sewers and Drainage and Embankment Commissioners	275,716
Church Rates	9,468
Baths	9,973
Total	26,216,459
Total, 1883-4	24,871,088

The aggregate receipts of the local authorities of England and Wales during the financial year 1884-5 amounted to 55,437,233*l.*, including receipts from loans. The receipts from loans during the year amounted to 10,933,114*l.*

Coinage of the Royal Mint.

The amount of gold, silver, and copper (bronze) moneys coined at the Royal Mint in each year from 1868 to 1886 was as follows:—

Years.	Gold.	Silver.	Copper.
	£	£	£
1868	1,653,384	301,356	16,328
1869	7,372,204	76,428	20,832
1870	2,313,384	336,798	32,704
1871	9,919,656	701,514	7,616
1872	15,261,442	1,243,836	47,413
1873	3,384,568	1,081,674	46,218
1874	1,461,565	890,604	65,632
1875	243,264	594,000	69,813
1876	4,696,648	222,354	61,450
1877	981,468	420,948	51,146
1878	2,265,069	613,998	17,024
1879	35,050	549,054	44,654
1880	4,150,052	761,508	19,269
1881	—	997,128	39,341
1882	—	209,880	42,560
1883	1,403,713	1,274,328	33,450
1884	2,324,015	658,548	69,290
1885	2,973,452	720,918	57,568
1886	—	417,384	51,669

The report of the Deputy Master states that the demand for Imperial coin during the year 1886 was somewhat less than usual. No gold was received for coinage, and the amount of silver coined was under the average of recent years. The amount of bronze coined was somewhat less than that of 1885, although considerably in excess of the yearly average of the last 10 years. The Colonial coinage executed, however, were unprecedently numerous. The seignorage which accrued to the State last year was at the rate of 19½*d.* per ounce, or 41$\frac{13}{16}$ per cent., as against 36 per cent. in 1885, and 30¾ per cent. in 1884. This is the highest rate of seignorage yet attained, and shows the very low price of silver bullion which ruled during the year. The rate at which silver coin is issued by the Mint is 66*d.* per ounce. The issue of pence and half-pence from the Mint to certain towns in the Northern and Midland counties was suspended during the greater part of the year, applicants for new coin being referred to firms in those districts holding a surplus stock of bronze coin. By this arrangement the circulation was adjusted. It having been suggested that there was a probability of a systematic importation of foreign bronze coins into England for the sake of the small profit which would accrue on the transaction, the importation of such coins was prohibited by a Royal Proclamation issued on the 24th March, 1887. The total amount of bronze coined and issued from its first introduction in 1860 to the end of 1886 is 1,752,363*l.*

Bank Rate.—The following Table shows the Average Minimum Rate per cent. of Discount charged by the Bank of England in each Month, in each Year from 1873 to 1886:—

Months.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
January	4½	3¾	4½	4½	2	3½	4½	3	3 5/16	5 1/16	4½	3	5	3½
February	3½	3½	3½	4	2	2	3	3	3½	5 5/16	3¾	3 1/16	5	2½
March	3½	3½	3½	3½	2	2¼	2½	3	3	4	3	3 3/16	3 5/16	2
April	4	3½	3½	2⅞	2	3	2⅞	3	3	3	3	2½	3½	2
May	5½	4	3½	2	2⅞	3	2	3	2½	3	3 1/16	2½	2 3/16	2 5/16
June	6½	2	3½	2	3	2½	2	2¾	2½	3	4	2⅛	2	2 5/16
July	4⅞	3	3	2	2½	3½	2	2¾	2½	3	4	2	2	2½
August	3½	3⅝	2½	2	2⅛	4⅝	2	2½	2 5/16	3 13/16	4	2	2	2 5/16
September	3½	3	2	2	3	5	2	2½	4	4 7/16	3 13/16	2	2	3½
October	6	3½	3⅝	2	4½	5½	2	2½	3 3/16	5	3	2 5/16	2	3⅝
November	8½	4½	3½	2	4⅞	5⅝	2⅞	2½	5	5	3	4 5/16	2 3/16	4
December	5½	6	3	2	4	5	3	2⅞	5	5	3	5	3 1/16	4½
Average for Year	4¾	3¾	3½	2⅝	2⅞	3¾	2⅝	2¾	3½	4⅛	3 9/16	2 9/16	3	3

Price of Stock.—The following Table shows the medium price per 100*l.* of the Three per Cent. Consolidated Stock of the Public Funds of the United Kingdom in each Month, in each Year from 1873 to 1886:—

Months.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
January	92 1/16	92 1/16	92 3/16	93 7/16	95 1/16	95 3/16	95 3/16	97 3/16	98 5/16	99 15/16	100 1/16	101 4/16	99 3/16	99 4/16
February	92 1/16	92 1/16	92 1/16	94 3/16	95 1/16	95 9/16	96 1/16	98 5/16	98 15/16	99 13/16	102 1/16	101 3/16	99 1/16	100 5/16
March	92 5/16	92	93	94 3/16	96 7/16	95 1/16	96 3/16	97 7/16	99 3/16	100 7/16	102 1/16	101 9/16	97 3/16	100 7/16
April	93 1/16	92 1/16	93 1/16	94 15/16	95 5/16	94 13/16	98 1/16	98 5/16	100 13/16	101 5/16	102 5/16	102 3/16	96 1/16	100 5/16
May	93 1/16	93 1/16	94	96	94 1/16	96 3/16	98 3/16	99 1/16	102 5/16	102	101 7/16	101 1/16	99 1/16	101 2/16
June	92 1/16	92 5/16	93	94 1/16	94 3/16	95 7/16	97 1/16	98 9/16	100 3/16	100 1/16	100 1/16	100 1/16	99 7/16	100 9/16
July	92 1/16	92 5/16	94 1/16	95 1/16	94 3/16	95 11/16	97 1/16	98 9/16	101 3/16	99 13/16	99 13/16	100 3/16	99 3/16	101 5/16
August	92 3/16	92 1/16	94 3/16	96 7/16	95 1/16	94 13/16	97 3/16	97 3/16	100 1/16	99 3/16	99 7/16	100 5/16	100	101 1/16
September	92 1/16	92 5/16	94 5/16	95 5/16	95 1/16	94 13/16	97 1/16	97 1/16	99 5/16	99 7/16	100 5/16	101 1/16	100 1/16	100 9/16
October	92 1/16	92 3/16	94 9/16	95 7/16	95 3/16	94 3/16	98	98 9/16	98 15/16	101 3/16	101 1/16	100 9/16	100 5/16	100 5/16
November	92 5/16	93 1/16	94 7/16	95 1/16	96 1/16	95 1/16	98 1/16	99 15/16	100 1/16	102 1/16	101 1/16	100 1/16	100 1/16	101 3/16
December	92	91 5/16	93 5/16	94	95 9/16	94 5/16	97 5/16	98 1/16	99 5/16	100 13/16	100 5/16	99 1/16	100	100 1/16
Medium for Year	92 1/16	92 1/16	93 3/16	95	95 5/16	95 3/16	97 1/16	98 5/16	100	100 1/16	101 3/16	101	99 1/16	100 5/16

The following is a Return of the Quarterly Averages of the Weekly Liabilities and Assets of the Bank of England for 1876, 1881, 1883, 1884, 1885 and 1886:—

Years.	Quarter ended	Liabilities.			Assets.		
		Notes in Circulation.	Deposits.	Total.	Securities.	Bullion.	Total.
		£	£	£	£	£	£
1876	March	27,118,000	26,662,000	53,780,000	34,336,000	22,932,000	57,268,000
	June	27,917,000	28,610,000	56,527,000	32,513,000	27,120,000	59,633,000
	September	28,653,000	33,669,000	62,322,000	32,314,000	33,456,000	65,770,000
	December	28,565,000	33,043,000	61,608,000	33,440,000	31,272,000	64,712,000
1881	March	26,100,000	34,017,000	60,117,000	37,204,000	26,400,000	63,604,000
	June	26,859,000	32,757,000	59,616,000	36,343,000	26,366,000	62,709,000
	September	27,135,000	31,514,000	58,649,000	37,478,000	24,676,000	62,154,000
	December	26,237,000	28,633,000	54,870,000	37,096,000	20,876,000	57,972,000
1883	March	25,385,000	30,362,000	55,747,000	37,141,000	22,142,000	59,283,000
	June	25,847,000	30,547,000	56,394,000	38,418,000	21,130,000	59,548,000
	September	26,142,000	29,016,000	55,158,000	35,381,000	23,253,000	58,634,000
	December	25,683,600	29,205,000	54,888,000	35,669,000	22,355,000	58,024,000
1884	March	24,744,751	32,745,694	57,490,445	37,381,698	22,534,204	59,915,902
	June	25,493,494	32,344,344	57,837,838	34,837,450	25,125,254	59,962,704
	September	25,954,761	30,797,424	56,752,185	35,411,106	23,801,465	59,212,571
	December	25,222,999	29,346,720	54,569,719	36,336,691	20,360,721	56,697,412
1885	March	23,994,768	30,043,542	54,038,310	35,932,542	23,393,083	59,325,625
	June	24,725,706	35,306,785	60,032,491	35,055,164	26,687,283	61,742,447
	September	25,168,582	35,605,974	60,774,556	37,614,717	25,113,487	62,728,204
	December	24,621,423	29,344,372	53,965,795	34,643,349	20,826,856	55,470,205
1886	March	24,051,447	31,950,247	56,001,694	36,480,809	22,010,816	58,491,625
	June	24,747,576	29,725,356	54,472,932	35,800,110	20,760,865	56,560,975
	September	25,146,897	27,985,237	53,132,134	34,247,171	21,370,179	55,617,350
	December	24,691,913	27,038,698	51,730,611	33,895,673	19,929,836	53,825,509

2. GENERAL COMMERCE AND NAVIGATION.

Navigation Returns.

The subjoined table shows the tonnage of British and Foreign vessels (sailing and steam) entered and cleared, *with cargoes*, at ports in the United Kingdom, from and to foreign countries and British Possessions, from 1868 to 1886:—

Years.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1868 ..	9,572,450	4,279,207	13,851,657	10,902,171	4,570,848	15,473,019
1869 ..	10,042,182	4,444,518	14,486,700	11,313,757	4,603,227	15,916,984
1870 ..	10,308,952	4,601,790	14,910,742	11,934,087	4,779,851	16,713,938
1871 ..	11,250,120	5,205,222	16,455,342	13,396,583	5,650,872	19,047,455
1872 ..	12,139,805	5,766,135	17,905,940	13,574,471	5,673,881	19,248,352
1873 ..	12,474,912	6,320,145	18,795,057	13,653,030	5,486,335	19,139,365
1874 ..	12,751,128	6,330,278	19,081,406	14,010,786	5,742,701	19,753,487
1875 ..	12,852,351	6,187,577	19,039,928	14,454,989	5,958,750	20,413,739
1876 ..	13,672,122	7,354,549	21,026,671	15,201,602	6,309,111	21,510,713
1877 ..	14,894,448	7,237,176	22,131,624	15,358,033	5,837,323	21,195,356
1878 ..	14,513,688	6,804,558	21,318,246	15,783,488	5,798,200	21,581,688
1879 ..	15,039,579	6,059,765	21,099,344	17,095,146	5,754,211	22,849,357
1880 ..	17,018,011	6,975,269	23,993,280	18,867,857	6,817,813	25,685,670
1881 ..	16,864,668	6,360,040	23,224,708	19,605,532	6,731,161	26,336,693
1882 ..	17,810,380	7,004,669	24,815,049	20,392,626	7,306,237	27,698,863
1883 ..	19,186,054	7,124,264	26,310,318	22,135,662	7,237,498	29,373,160
1884 ..	18,209,236	6,487,449	24,696,685	21,946,670	7,326,992	29,273,662
1885 ..	18,759,773	6,904,687	25,664,460	21,885,206	7,432,525	29,317,731
1886 ..	18,220,910	6,462,319	24,683,229	22,065,720	7,041,920	29,107,640

It will be seen from this table that the tonnage of vessels entered and cleared has been doubled within the last 20 years. It is curious to note that during the last 10 years the tonnage has progressively increased notwithstanding the depression in trade.

Coasting Trade.

The following table gives the tonnage of British and Foreign vessels employed in the coasting trade entered and cleared, with cargoes, at ports in the United Kingdom during the years 1883, 1884, 1885, 1886:—

	—	1883.	1884.	1885.	1886.
		Tons.	Tons.	Tons.	Tons.
Entered	British	26,620,885	26,594,874	27,031,645	27,018,315
	Foreign	128,969	117,323	136,169	121,529
	Total	26,749,854	26,712,197	27,167,814	27,139,844
Cleared	British	24,022,075	24,082,711	24,532,870	24,383,460
	Foreign	80,634	91,459	113,172	108,304
	Total	24,102,709	24,174,170	24,646,042	24,491,764

Imports.

INTO THE UNITED KINGDOM.—The following table gives the quantities of the chief articles imported into the United Kingdom in the year ended the 31st of December, 1886:—

Articles.		Quantity.
Animals (for food)	No.	1,358,587
Bacon and Hams	Cwts.	4,210,829
Beef	,,	997,590
Butter and Butterine	,,	1,543,566
Cheese	,,	1,734,890
CORN:—		
Wheat	,,	47,435,806
Barley	,,	13,713,637
Oats	,,	13,485,233
Maize	,,	31,011,565
,, other kinds	,,	5,257,535
Flour of wheat	,,	14,689,560
,, ,, of other kinds	,,	467,932
Total of Corn	,,	126,061,268
Eggs	Grt. hundreds.	1,035,171
Fish	Cwts.	1,679,197
Fruit	Bush.	11,585,824
Onions	,,	3,633,587
Potatoes	Cwts.	2,707,889
Rice	,,	6,557,213
Sugar (refined)	,,	6,372,050
,, (unrefined)	,,	16,133,661
Cocoa	Lbs.	25,363,443
Coffee	,,	1,006,543
Tea	,,	230,669,292
Spirits	Gals.	10,878,227
Wine	,,	14,552,864
Tobacco	Lbs.	83,217,982
METALS:—		
Copper	Tons	197,600
Iron and Steel	,,	3,537,652
Tin	Cwts.	481,528
Zinc	Tons	54,121
CHEMICALS:—		
Indigo	Cwts.	85,308
OILS:—		
Cocoa-nut	,,	156,775
Olive	Tuns	20,664
Palm	Cwts.	1,004,419
Petroleum	Gals.	71,251,736
Seed	Tuns	16,315
Fish	,,	15,834
Turpentine	Cwts.	294,451
MATERIALS:—		
Cotton (Raw)	,,	15,312,900
Flax	,,	1,002,381
Hemp	,,	1,219,751
Jute	,,	5,349,109
Wool	,,	596,470,995
Furs	,,	20,128,949
Wood (Hewn and Sawn)	Lds.	5,368,548

Articles.		Quantity.
MANUFACTURED ARTICLES:—		
Clocks	No.	839,934
Leather	Lbs.	77,810,381
Paper (Printing, &c.)	Cwts.	305,322
,, other kinds	,,	1,205,419
China, &c.	,,	157,043
Yarn, for weaving	Lbs.	18,620,957
Woollen Yarn	,,	1,420,393
MISCELLANEOUS:—		
Hops	Cwts.	153,759
SEEDS:—		
Clover, &c.	Cwts.	289,004
Cotton	Tons	254,613
Flax	Qrs.	2,072,011
Rape	,,	372,318

Exports.

OF HOME PRODUCE FROM THE UNITED KINGDOM.—The following table shows the quantities of the chief articles of British and Irish produce and manufactures exported from the United Kingdom in the year ended the 31st of December, 1886:—

Principal Articles.		Quantity.
Horses	No.	7,326
ARTICLES OF FOOD, &c.:—		
Beer	Brls.	420,290
Butter	Cwts.	29,225
Cheese	,,	12,922
Corn: wheat	,,	118,738
,, ,, flour	,,	120,359
Spirits	Gals.	2,688,214
Sugar, Refined	Cwts.	852,733
RAW MATERIALS:—		
Coals, &c.	Tons	23,283,389
Wool	Lbs.	22,225,200
Cotton (Yarn and Twist)	,,	254,331,100
MANUFACTURES:—		
Cotton (Piece Goods)	Yds.	3,497,866,100
Jute (Yarn)	Lbs.	30,707,300
,, (Piece Goods)	Yds.	216,103,100
Linen (Yarn)	Lbs.	15,891,700
,, (Piece Goods)	Yds.	163,756,400
Silk (Broad Stuffs)	,,	7,265,645
Woollen and Worsted Yarn	Lbs.	45,650,000
Cloths	Yds.	51,241,000
Stuffs	,,	1,987,601,800
Blankets	Prs.	18,112,300
Carpets	Yds.	11,646,600
METALS:—		
Copper	Cwts.	1,135,876
Iron and Steel	Tons	3,388,494
Lead	,,	42,365
Tin	,,	93,877
Brass	,,	85,695
Zinc	,,	167,634

Articles.	Quantity.
CHEMICALS:—	
Alkali . . . . . Cwts.	6,242,800
Cement . . . . . ,,	8,517,600
Gunpowder . . . . Lbs.	11,598,200

Articles.	Quantity.
MISCELLANEOUS:—	
Bags . . . . . Dozs.	3,663,541
Candles . . . . . Lbs.	8,967,100
Oil . . . . . Gals.	17,669,100
Paper (Printing, &c.) Cwts.	738,249

British and Irish Produce Exported.

The following table shows the value of exports of British and Irish produce from the United Kingdom to foreign countries and British possessions in 1886:—

FOREIGN COUNTRIES.

Countries.	Value. £
Russia, Northern Ports . . .	3,249,363
——— Southern Ports . . .	1,174,954
Sweden and Norway	3,271,094
Denmark and Iceland . . .	1,729,589
——— Danish West Indies.	95,024
Germany	15,676,320
Holland	8,195,974
——— Java, and other Possessions in the Indian Seas	1,388,148
Belgium	7,126,635
France	13,614,282
——— Algeria	271,142
——— Possessions in Senegambia	56,985
——— Possessions in India .	6,681
Portugal	1,840,643
——— Azores and Madeira.	132,332
Spain	3,108,636
Spain, Canary Islands . . .	372,123
——— Fernando Po	8,083
——— West India Islands . .	1,740,043
——— Philippine Islands . .	839,568
Italy	6,092,470
Austrian Territories . . .	905,985
Greece	984,591
Roumania	929,721
Turkey	5,904,531
Egypt	2,858,076
Morocco	463,830
United States	26,824,876
Mexico	900,699
Central America	679,266
Haiti and St. Domingo . . .	270,992
New Granada (United States of Colombia)	939,509
Venezuela	450,886
Ecuador	254,962
Brazil	6,069,429
Uruguay	1,254,468
Argentine Republic	5,190,577
Chile	1,608,935
Peru	864,057
China (exclusive of Hong Kong)	5,249,056
Japan	2,169,590
Western Coast of Africa . .	1,031,781
Other Countries	1,130,211
Total to Foreign Countries .	£136,926,117

BRITISH POSSESSIONS.

Countries.	Value. £
Channel Islands	467,154
Gibraltar	598,910
Malta	923,839
North American Colonies:—	
Dominion of Canada . .	7,546,902
Newfoundland	341,965
Total to North America Colonies.	£7,888,867
West India Islands and Guiana	2,274,487
British Honduras	76,177
Australia:—	
West Australia	380,417
South Australia.	1,518,152
Victoria	6,766,784
New South Wales	7,605,889
Queensland	2,219,660
Tasmania	559,661
New Zealand.	3,306,806
Fiji Islands	25,925
Total to Australia . . .	£22,383,294
British India	31,340,242
The Straits Settlements . . .	2,104,114
Ceylon	564,031
Hong Kong	2,310,532
Mauritius	260,867
Cape of Good Hope and Natal	3,304,132
West African Settlements . .	393,207
Possessions on Gold Coast . .	393,925
Other Possessions.	222,859
Total to British Possessions .	75,506,637
Total to Foreign Countries and British Possessions .	£212,432,754

Foreign and Colonial Merchandise Exported.

The following table shows the computed value of the foreign and colonial produce exported from the United Kingdom to foreign countries, and British possessions in 1886:—

Foreign Countries.	Value.
Countries.	£
Russia, Northern Ports	1,758,699
——— Southern Ports	225,519
Sweden and Norway	1,229,594
Denmark Proper, and Iceland	377,943
——— Danish West Indies	3,970
Germany	10,625,947
Holland	6,815,527
——— Java and other Possessions in the Indian Seas	36,685
Belgium	5,124,276
France	6,704,728
——— Algeria	4,490
——— Possessions in Senegambia	5,113
——— Possessions in India	77
Portugal	370,778
——— Azores and Madeira	24,473
Spain and the Balearic Islands	716,836
——— Canary Islands	15,024
——— Fernando Po	3,180
——— West India Islands	867,442
——— Philippine Islands	25,040
Italy	888,167
Austrian Territories	437,463
Greece	99,155
Roumania	69,033
Turkey	665,493
Egypt	133,691
Morocco	114,499
United States	10,782,929
Mexico	102,697
Central America	23,386
Haiti and St. Domingo	14,982
New Granada (United States of Colombia)	42,663
Venezuela	9,578
Ecuador	16,734
Brazil	285,766
Uruguay	71,424
Argentine Republic	131,703
Chile	135,377
Peru	117,639
China (exclusive of Hong Kong)	166,488
Japan	150,129
Western Coast of Africa (exclusive of French and Spanish Possessions separately stated)	157,503
Other Countries	121,349
Total to Foreign Countries	£49,673,189

British Possessions.	
Channel Islands	209,871
Gibraltar	82,034
Malta	135,124
North American Colonies	1,151,977
West India Islands and Guiana	263,736
British Honduras	14,857
Australia	2,622,134
British India	1,176,919
The Straits Settlements	155,467
Ceylon	38,383
Hong Kong	249,234
Mauritius	31,430
Cape of Good Hope and Natal	323,022
West African Settlements	29,553
Possessions on the Gold Coast	41,396
Other Possessions	35,937
Total to British Possessions	£6,561,074
Total to Foreign Countries and British Possessions	£56,234,263

Transhipments.

The following table gives the value of the Foreign Merchandise transhipped at Ports in the United Kingdom from 1881 to 1886:—

	1881.	1882.	1883.	1884.	1885.	1886.
	£	£	£	£	£	£
Spirits, rum... ...	21,270	21,323	41,722	42,102	43,573	26,245
,, brandy ...	908,589	839,436	912,510	823,777	742,429	671,480
,, Geneva ...	261,290	261,068	257,416	264,044	160,955	124,110
,, of all other sorts ...	196,579	157,264	170,924	114,794	145,127	233,149
Tea	617,542	438,311	464,541	418,773	743,637	568,704
Tobacco, unmanufactured	796,214	739,909	560,387	569,665	610,163	715,878
Tobacco, manufactured and cigars...	158,578	231,979	257,453	265,949	294,626	292,586
Other articles not separately enumerated	9,603,175	9,306,467	9,024,365	9,356,007	8,215,175	8,073,913
Total of all articles transhipped ...	12,563,237	11,995,757	11,689,318	11,885,111	10,955,685	10,706,065

3. TRADE AND AGRICULTURE.

The Customs Revenue of 1886-7.

The Commissioners of Customs in their 31st Annual Report, state that the gross receipts of Customs Revenue in the year ended 31st March, 1887, amounted to 20,312,885*l.*, showing an increase of 395,890*l.* on the previous year. The ordinary increase on the preceding year at the usual calculation of 1 per cent. in the growth of the population would have amounted to 199,170*l.*, and the actual increase exceeds that amount by 196,720*l.*, or very nearly 1 per cent. in excess of the growth of the population. This increase is mainly attributable to the yield of duty on tea; but the duties on dried fruit, Geneva and unrated spirits, and tobacco contributed materially to the result.

Coffee and Tea.

The Commissioners report that the duty on coffee continues to decline. The bulk consumption for the year ending 31st December, 1877, was 32,286,016 lb,, showing a consumption per head of the population of 0·961 lb. The bulk consumption for the year ended the 31st of December last was 31,608,304 lbs., showing a consumption per head of the population of 0·861 lb., a decrease per head of 0·1 lbs., or at the rate of 10·4 per cent. The consumption of tea, on the other hand, enables them to report satisfactorily on the yield of revenue from this article. Taking the same years for comparison as for coffee, we find that in 1877 the bulk consumption amounted to 151,274,852 lbs., equal to a consumption of 4·52 lbs. per head of the population; whilst in 1886 the bulk consumption amounted to 178,909,881 lbs., equal to a consumption of 4·87 lbs. per head of the population, an increase per head of 0·35 lb., or at the rate of 7·7 per cent.

Wine.

By the change made during the year 1886-87 in duty with regard to wine, the rate of 1*s.* per gallon on wine was extended from wine containing under 26 degrees of proof spirit so as to include wine of a spirituous strength not exceeding 30 degrees of proof spirit, and the rate of 2*s.* 6*d.* per gallon on wine containing under 42 degrees of proof spirit was extended so as to include wine of a spirituous strength not exceeding 40 degrees of proof spirit.

WINE, HOME CONSUMPTION.

	From 15th August, 1885, to 31st March, 1886.		From 15th August, 1886, to 31st March, 1887.	
	Under 26°.	Under 42°.	Not exceeding 30°.	Not exceeding 42°.
	Gallons.	Gallons.	Gallons.	Gallons.
France	2,910,652	19,928	3,193,586	11,433
Spain	291,393	1,924,736	986,934	1,466,793
Portugal	16,354	1,694,307	37,712	1,933,590
Other Countries ..	382,550	448,954	589,662	370,032
	3,600,949	4,087,925	4,807,894	3,781,848
Total	7,688,874		8,589,742	

The alteration in the scale of duty was brought about in consequence of the Commercial Treaty concluded with Spain on the 26th of April, 1886, and it will be observed that the number of gallons of Spanish wine cleared for home consumption at the 1*s.* rate since the change in the duty exceeded by 695,000 gallons the number cleared for a similar period of time before the change. On these figures the revenue would have acquired 52,000*l.* more on the Spanish wines alone, had the old rate of duty been in force, but a slight allowance should be made for the natural increase in the clearance of wines under 26 degrees in strength, which would probably have occurred owing to the depletion of duty-paid stocks in this country had no change of duty taken place. In the case of "other countries," excluding France and Portugal, 207,000 additional gallons were brought within the range of the 1*s.* duty, with a corresponding loss of revenue exceeding 15,000*l.* It will thus be seen that in a period slightly exceeding seven months the revenue suffered to the extent of, probably, not less than 67,000*l.* on wines from Spain and countries other than France and Portugal. The total increase in the quantity of wines cleared for home consumption, since the change effected in the rate of duty for the periods taken for comparison, amounts to 901,000

gallons. But this increase cannot be attributed only to the effect of the Treaty with Spain. The wines of France and Portugal have not been affected by it. The great bulk of French wines do not exceed 26 degrees of proof spirit in strength, and the great bulk of Portuguese wines imported into this country exceed 30 degrees of proof spirit in strength. We may deduct the increase in French wines at the lower rate of duty of 283,000 gallons, and of Portuguese wines at the higher rate of 239,000 gallons, a total of 522,000 gallons, from the total increase of 901,000 gallons of wine cleared for home consumption, and there will be left an increase of 379,000 gallons of wine imported from those countries chiefly affected by the alteration in the duty on wine. There is no doubt that for a considerable period those interested in the wine trade had been in a condition of great uncertainty as to the advisability of keeping their stocks up to the usual dimensions.

Foreign Spirits.

The revenue derived from foreign spirits in the year 1886–87 shows an increase of 35,294*l.* over that of the previous year; but it is 93,668*l.* less than that of the year 1884–85. The rate of increase in 1886–87 is very nearly equal to that of the increase of population, that is to say, it is as 0·8 to 1. Commencing with the year 1876–77, the amount of duty collected on foreign spirits has varied as follows:—

1877–78 . . .	3·94 decrease,
1878–79 . . .	3·76 ,,
1879–80 . . .	12·19 ,,
1880–81 . . .	5·11 ,,
1881–82 . . .	4·93 ,,
1882–83 . . .	3·34 increase,
1883–84 . . .	3·51 decrease,
1884–85 . . .	2·36 increase,
1885–86 . . .	2·99 decrease,
1886–87 . . .	0·84 increase,

the net result being a decrease of 29·89 per cent., whereas the population has increased in the last ten years by 9·7 per cent. In other words, had the consumption of foreign spirits increased in the same ratio as the population the receipts for 1886–87 would have been 6,357,596*l.* instead of 4,220,169*l.* only. Comparing the past year with that ended 31st March, 1878, the actual decrease in the amount of duty received on foreign spirits is nearly 24 per cent., being 1,324,927*l.* Of this decrease 559,794*l.* arise from rum, and 768,924*l.* from brandy, whilst there is an increase of 3,791*l.* from spirits of other sorts. The decrease in rum is at the rate of 22 per cent., of brandy 36, and the increase in spirits of other sorts is at the rate of 0·4 per cent. The decrease in British spirits for the same period is 13 per cent. It will be observed that, on the whole, foreign spirits have decreased to a much greater extent than the home-made article; but as regards brandy, the decline is no doubt owing to a considerable extent to the effects of the ravages of the phylloxera among the vines of France. Had the consumption of spirits, both British and foreign, kept pace with the increase of population since the year 1876–77, the revenue derived from them in the past year would have amounted to 23,259,231*l.*, a sum greater than that actually collected by 5,565,469*l.* And the diminution of consumption may also be expressed by stating that the average amount of duty per head of population paid on spirits in 1876–77 was 12*s.* 8*d.*, whilst in 1886–87 it had fallen to 9*s.* 8*d.*

Average Gazette Prices of British Wheat per Imperial Quarter in each Month in 1873, 1876, 1881, 1883, 1884, 1885, and 1886.

Months.	1873.	1876.	1881.	1883.	1884.	1885.	1886.
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
January ..	55 9	44 9	42 5	40 2	38 7	33 7	29 10
February ..	56 4	43 1	41 9	40 11	37 3	32 8	29 5
March ..	55 6	43 0	42 7	42 3	37 4	31 10	29 10
April	54 10	44 11	44 6	41 11	37 5	34 1	30 7
May	56 0	45 1	44 5	43 2	37 9	36 8	31 10
June	58 7	47 5	44 6	42 10	37 2	33 6	31 7
July	59 6	48 3	46 5	42 2	37 0	33 8	31 2
August ..	60 6	46 0	48 6	43 6	36 11	33 5	32 5
September ..	64 2	46 8	52 3	41 10	33 9	31 3	31 10
October ..	60 10	46 6	47 1	40 5	32 3	30 11	29 11
November ..	60 9	47 11	45 11	40 3	31 5	30 11	31 2
December ..	61 8	49 9	44 7	39 6	31 1	30 6	33 2
The Year ..	58 8	46 2	45 4	41 7	35 8	32 10	31 0

Agricultural Returns.

The following table gives the agricultural returns for the years ending June, 1885, 1886, 1887:—

ACREAGE OF LAND IN GREAT BRITAIN UNDER

	Wheat.	Barley.	Oats.	Potatoes.	Hops.
	Acres.	Acres.	Acres.	Acres.	Acres.
1885 ..	2,478,318	2,257,346	2,940,490	548,731	71,327
1886 ..	2,285,905	2,241,164	3,081,596	553,961	70,127
1887 ..	2,317,362	2,085,204	3,087,989	559,648	63,506
	Comparison.—Increase (+) or Decrease (−).				
1887 with 1886	+31,457 or 1·4 p.c.	−155,960 or 7·0 p.c.	+6,393 or 0·2 p.c.	+5,687 or 1·0 p.c.	−6,621 or 9·4 p.c.
1887 with 1885	−160,956 or 6·5 p.c.	−172,142 or 7·6 p.c.	+147,499 or 5·0 p.c.	+10,917 or 2·0 p.c.	−7,821 or 11·0 p.c.

TOTAL NUMBER OF LIVE STOCK IN GREAT BRITAIN.

	Cattle.	Sheep and Lambs.			Pigs.
		Sheep.	Lambs.	Total.	
1885 ..	6,597,964	16,537,607	9,997,028	26,534,635	2,403,380
1885 ..	6,646,683	16,175,999	9,344,719	25,520,718	2,221,475
1887 ..	6,441,271	16,146,249	9,812,519	25,958,768	2,299,343
	Comparison.—Increase (+) or Decrease (−).				
1887 with 1886	−205,412 or 3·1 p.c.	−29,750 or 0·2 p.c.	+467,800 or 5·0 p.c.	+438,050 or 1·7 p.c.	+77,868 or 3·5 p.c.
1887 with 1885	−156,693 or 2·4 p.c.	−391,358 or 2·4 p.c.	−184,509 or 1·8 p.c.	−575,867 or 2·2 p.c.	−104·037 or 4·3 p.c.

The following table gives the quantities of British wheat sold in various market towns during the years 1880–86:—

	1880.	1881.	1882.	1883.	1884.	1885.	1886.
	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
Jan. ..	159,276	149,674	181,183	178,388	200,336	325,051	264,645
Feb. ..	139,037	119,220	175,830	214,415	214,936	239,338	279,789
Mar. ..	105,584	131,327	133,779	276,488	289,984	203,362	284,106
April ..	106,172	148,797	177,702	228,552	189,665	194,853	213,269
May ..	127,464	130,236	143,862	271,745	295,989	252,415	310,914
June ..	103,798	94,016	93,330	248,772	177,546	151,936	173,670
July ..	85,375	76,707	70,623	129,769	113,426	133,408	159,877
Aug. ..	53,120	49,330	42,366	150,772	190,608	171,941	169,706
Sept. ..	141,524	145,122	229,767	291,118	300,399	235,930	156,172
Oct. ..	242,834	284,193	217,418	289,859	291,764	352,017	295,309
Nov. ..	173,090	194,083	192,705	278,749	324,559	244,162	197,529
Dec. ..	170,633	215,550	245,292	342,519	243,920	235,102	234,836
Total ..	1,607,908	1,738,255	1,903,858	2,901,146	2,833,132	2,739,515	2,739,822

4. POPULATION, PUBLIC EMPLOYMENT, AND VITAL STATISTICS.

Population of the United Kingdom in 1886 and 1887.

The estimated population of the United Kingdom in the middle of 1886 and 1887, exclusive of the Army, Navy, and Merchant Seamen abroad, was as follows:—

	1886.	1887.
England and Wales ..	27,870,586	28,247,151
Scotland ..	3,949,393	3,991,499
Ireland ..	4,887,439	4,852,914
Totals ..	36,707,418	37,091,564

Estimated growth of population .. 384,126

Births, Marriages, and Deaths.

The following table shows the total number of births, deaths, and marriages from 1872 to 1886:—

ENGLAND AND WALES.

Years.	Births.	Deaths.	Marriages.
1872	825,907	492,265	201,267
1873	829,778	492,520	205,615
1874	854,956	526,632	201,010
1875	850,607	546,453	201,212
1876	887,968	510,315	201,874
1877	888,200	500,496	194,352
1878	891,906	539,872	190,054
1879	880,389	526,255	182,082
1880	881,643	528,624	191,965
1881	883,642	491,935	197,290
1882	889,018	516,654	204,405
1883	890,722	522,997	206,384
1884	908,584	531,951	204,205
1885	893,694	522,517	197,446
1886	903,216	537,078	195,806

SCOTLAND.

1872	118,873	75,741	25,580
1873	119,738	76,857	26,730
1874	123,795	80,676	26,247
1875	123,693	81,785	25,921
1876	126,749	74,122	26,503
1877	126,824	73,946	25,790
1878	126,707	76,775	24,333
1879	125,736	73,329	23,462
1880	124,652	75,795	24,489
1881	126,214	72,301	25,948
1882	126,182	72,966	26,574
1883	124,462	76,867	26,855
1884	129,041	75,128	26,061
1885	126,110	74,603	25,256
1886	127,927	73,622	24,469

IRELAND.

Years.	Births.	Deaths.	Marriages.
1872	149,292	97,577	27,114
1873	144,377	97,537	26,270
1874	141,288	91,961	24,481
1875	138,320	98,114	24,037
1876	140,469	92,324	26,388
1877	139,659	93,543	24,722
1878	134,117	99,629	25,284
1879	135,328	105,089	23,254
1880	128,086	102,906	20,363
1881	125,847	90,035	21,826
1882	122,648	88,500	22,029
1883	118,163	96,228	21,368
1884	119,195	87,564	22,670
1885	115,964	90,833	21,329
1886	113,995	87,376	20,681

Police Force in the United Kingdom.

The strength of the Police Force in 1886 was as follows: in England and Wales, 36,447; Scotland, 3,824; Ireland, 13,957. In 1874 the numbers stood thus: England and Wales, 28,870; Scotland, 3,007; Ireland, 12,545.

The Army.

The strength of the Regular Army at home and abroad in 1886 was as follows:—Officers: at home, 3,556; abroad, 3,662; total, 7,218. Non-commissioned officers and men: at home, 94,501; abroad, 102,086; total, 196,587. Total of officers and men: at home, 98,057; abroad, 105,748. General total, 203,805.

A Census of Children.

The Report of the Education Department contains the following table of the number of children of what is technically termed the school age, viz., from 5 to 13, with the percentage of them at each age found on the register of rate-aided schools:—

Age.	No. of Children.		Percentage on Registers.	
	1885.	1886.	1885.	1886.
5– 6	599,317	607,407	73·59	73·89
6– 7	585,050	592,949	85·98	86·91
7– 8	570,927	578,634	90·95	90·69
8– 9	557,083	564,604	94·68	93·62
9–10	543,612	550,951	95·32	97·52
10–11	530,669	537,833	95·17	95·58
11–12	518,250	525,247	86·03	88·78
12–13	507,063	513,908	67·98	68·36
	4,411,971	4,471,533	86·23	86·92

Textile Factories.

The following tables give the number of persons employed in textile factories subject to the "Factories and Workshops" Acts, during the years 1870, 1874, 1878, and 1885:—

Total males.	Total females.	Total persons.	Years.
England and Wales.			
304,292	413,759	718,051	1870
328,494	454,528	783,022	1874
317,675	460,028	777,703	1878
338,304	475,520	813,824	1885
Scotland.			
34,305	92,909	127,214	1870
44,269	110,650	154,919	1874
37,347	98,866	136,213	1878
45,440	106,839	152,279	1885
Ireland.			
19,936	42,029	61,965	1870
21,281	46,463	67,744	1874
19,177	42,453	61,630	1878
21,269	46,889	68,158	1885
Total United Kingdom.			
358,533	548,697	907,230	1870
394,044	611,641	1,005,685	1874
374,199	601,347	975,546	1878
405,013	629,248	1,034,261	1885

Merchant Shipping Service.

The following table shows the number of persons employed in registered sailing and steam vessels (exclusive of river steamers) of the United Kingdom in the Home and Foreign trade from 1875 to 1886:—

Year.	Vessels.	Tons.	Persons employed (exclusive of masters).
1875..	20,191	5,891,692	199,667
1876..	20,349	5,996,152	198,638
1877..	20,319	6,115,638	196,562
1878..	20,094	6,236,124	195,585
1879..	20,029	6,249,833	193,548
1880..	19,972	6,344,577	192,972
1881..	19,311	6,490,953	192,903
1882..	18,966	6,715,030	195,937
1883..	18,912	7,026,062	200,727
1884..	18,744	7,083,944	199,654
1885..	18,791	7,209,163	198,781
1886..	17,917	7,144,097	204,470*

Pauperism.

The following table shows the number of paupers (exclusive of vagrants) in receipt of relief in the several unions and parishes under boards of guardians, in England and Wales, on the 1st January in each year, 1882–87:—

1st January in each year.	Total.		
	In-door.	Out-door.	Total.
1882	188,433	609,181	797,014
1883	190,386	608,910	799,296
1884	187,593	586,717	774,310
1885	190,184	593,971	784,155
1886	194,440	613,193	807,633
1887	196,853	620,436	817,289

* Including Lascars and Asiatics under Asiatic Articles of Agreement, the number of which, in 1886, was in sailing vessels 185, and in steam vessels 16,488.

5. ACCIDENTS AND CRIMES.

Railway Accidents.

The Annual Report of the Board of Trade states that during the year 1886, the number of persons killed in the working of the railways was 938, and the number of injured 3,539. Of the above numbers, 95 persons killed and 1,342 persons injured were passengers; but of these only 8 were killed and 615 injured in consequence of accidents to or collisions between trains; the deaths of the remaining 87 passengers and the injuries to 727 are returned as due to a variety of other causes, but more especially to a want of caution on the part of the individuals themselves. Of the remainder, 421 killed and 1,929 injured were officers or servants of the railway companies, or of contractors. Of suicides there were 80; of trespassers, 205 were killed and 91 injured; of persons passing over the railway at level crossings, 81 were killed and 25 injured; and of other persons, from miscellaneous causes, 52 were killed and 71 injured. In addition to the above, the companies have returned 51 persons killed and 3,868 injured from accidents on their premises, which cannot be considered as "railway accidents," as they were not connected with the movement of railway vehicles. With regard to railway servants, 6 were killed and 969 injured while employed in loading and unloading waggons; 96 were killed and 866 injured while employed in various shunting operations: 18 were killed and 54 injured by being caught between vehicles; 10 were killed and 24 injured by falling between the train and platform; 87 were killed and 118 injured while working on the permanent way and sidings: and 81 were killed and 111 injured while walking, crossing, or standing on the line on duty.

Metropolitan Police Force.

The Metropolitan Police District as established by 2 & 3 Vict. c. 47, extends over a radius of 15 miles from Charing Cross, exclusive of the City of London and the liberties thereof, and embraces an area of 688·31 square miles, extending from Colney Heath, Hertfordshire, on the north, to Mogadore, Todworth Heath, in the south, and from Lark Hall, Essex, in the east, to Staines Moor, Middlesex, in the west. The authorized strength of the police of the metropolis on the 31st December, 1886, was 28 superintendents, 652 inspectors, 1,167 sergeants, and 11,957 constables; total 13,804, being an increase of 3 superintendents, 18 inspectors, 34 sergeants, and 430 constables since 31st December, 1885. Of these 4 superintendents, 49 inspectors, 184 sergeants, and 1,396 constables were employed on special duties for various Government Departments, including special protection posts inside public offices and buildings, dockyards and military stations, and by public companies and private individuals. The number of police available for service in the metropolis, exclusive of those specially employed and whose services were paid for, was 24 superintendents, 603 inspectors, 983 sergeants, and 10,561 constables; total 12,161. An average of one-fourteenth of the force, except special duties, sick, &c. (739) is daily on leave in accordance with the regulation granting one day's leave of absence to each man every fortnight. Of the remainder, 2,447 men were employed on station and outside protection duties, and special duties under various Acts of Parliament, and after deducting the casualties (520) caused by the absence of men sick and on detached sick leave, there remained 8,465 police available for duty in the streets. Under the existing system about 60 per cent. of this number is required for night duty—from 10 p.m. to 6 a.m. The remaining 40 per cent. is detailed for duty in four reliefs in town districts and two reliefs in country districts from 6 a.m. to 10 p.m. During the day the ordinary beat duty of the whole of the metropolis devolves upon some 1,478 men. In addition to these numbers, however, 457 constables on "fixed points" and 78 at hackney carriage standings are on duty in the streets from 9 a.m. to 1 a.m. The pay of the force alone, including chief constables and superintendents, inspectors, sergeants, and constables, was 1,078,715*l*. Since 1849, when the authorised strength of the police was 5,493, of whom 5,288 were available for police purposes, there have been built 488,374 new houses, while 3,009 are in course of errection, 1,810 miles of new streets have been added to the charge of the police, and the population has increased from 2,473,758 to 5,364,627: to meet this the available strength of the police force for ordinary duties, exclusive of those employed for the protection of public buildings in consequence of the dynamite outrages, is 8,465. The number of men recommended for pension or gratuity was 231. Of these, 36 who had served over 5 and under 15 years were recommended for gratuities; 5 who had served under 5 years and 7 who had served between 5 and 15 years were recommended for pensions as being disabled by injuries on duty. Of the remainder who were recommended for pensions all had served over 15 years, viz., 43 between 15 and 20, 122 between 20 and 25, 18 between 25 and 30 years. The number of men recommended for pension is 195, a percentage of 1·47 on the total of the Metropolitan and Woolwich Divisions 13,257.

Common Lodging Houses.

During the year 63 new houses were registered, 77 re-opened, and 124 closed, thus leaving 1,069 registered houses under control at the end of the year, the same being apportioned to accommodate 32,713 lodgers. The above numbers show an increase of 16 houses and an increase of 1,703 lodgers on the numbers of the preceding year. 213 keepers have been served with notices to register their houses; 180 of this number subsequently made application to provisionally register, the remainder either discontinued to receive lodgers or have made such alteration in their houses as to exempt them from the provisions of the Act. 196 non-registered houses are periodically visited to enforce the Acts; a number of these will be registered when the necessary alterations and improvements are completed. 117 houses were surveyed, of which 29 were those requiring re-measurement, caused through alterations to afford increased accommodation having been made, the whole apportioned to receive 2,995 lodgers. 22 keepers of registered houses were summoned for various infringements of the Acts and regulations, all of whom were convicted and fined. 88 cases of illness occurred other than infectious, 47 of which resulted fatally, necessitating inquests being held, the verdicts returned in a number of cases being that of privation and intemperance. 28 cases of infectious diseases occurred, which shows a decrease of 46 over the numbers of the previous year.

Lost Property.

Of the number of articles deposited in 1886, 12,111 have been restored to the owners, who paid awards to the finders amounting to 1,993*l.*, representing a value of from 15,000*l.* to 16,000*l.* The unclaimed deposits, 10,250 in number, have been, or will, when the three months has expired, be restored to the drivers and conductors who deposited them. The following are a few of the valuable articles which have been received during the year. Bag with 216*l.*, notes and gold. Bag, 100*l.*, notes. Bag, 300*l.*, bonds; and there have been also several deposits of cash varying from 10*l.* to 50*l.* Special awards for valuable property have been made to drivers and conductors, as follows. One 35*l.*, one 20*l.*, one 10*l.*, and 14 varying from 5*l.* to 10*l.* In 1869, the year before the present regulations with respect to awards came into operation, only 1,912 articles were deposited.

Public Carriages.

During the year licences were issued in respect of — 7,020 (hansoms), 3,997 four-wheelers, and 2,531 stage carriages; total, 13,548, being an increase over 1885 of 143 hansoms, 124 four-wheelers, and 130 stage carriages. The new carriages introduced during the year were—863 hansoms, 266 four-wheelers and 55 stage carriages; total, 1,184.

Drunkenness in London.

In the year 1886, 16,975 persons were charged as drunk and disorderly, being an increase of 1,339 cases over the previous year. Simple drunkenness increased from 6,932 in 1885 to 7,645 in 1886, and disorderly characters decreased from 4,271 in 1885 to 3,910 in 1886. The average proportion per 1,000 of the estimated population of persons apprehended for drunkenness and disorderly conduct from 1860 to 1870 was 5·576. From 1870 to 1880 it increased to 7·156; in 1881 the proportion was 5·698, in 1882 5·269, in 1883 5·264; 4·883 in 1884, 4·295 in 1885, and in 1886 4·589.

Stolen Property.

The reported loss of property stolen during the year 1886 in the Metropolis was 118,340*l.*, an increase on the previous year of 6,004*l.*; of the whole reported loss 18,129*l.* was recovered, leaving the nett loss 100,211*l.* The total number of felonies committed amounted to 19,156 as against 19,505 in 1885, the number of persons apprehended was 12,147 as against 12,433 in 1885, and the proportion per 1,000 of felonies to the estimated population was 3·571, or slightly less than that of 1885, which was 3,712; 126 were taken into custody charged with burglary, of whom 104 were convicted and sentenced; 180 were apprehended for breaking into dwelling houses, shops, warehouses, &c., of whom 115 were convicted and sentenced; 115 people were taken into custody for robbery with violence, 51 of whom were acquitted; 54 were taken into custody for forgery, 6 were discharged, 40 convicted and sentenced, and 8 acquitted.

Street Accidents.

The number of fatal accidents in the London streets which came under police notice were 127 in 1884, 127 in 1885, and 114 in 1886. The number of persons injured in the streets decreased from 3,986 to 3,949. 928 were injured by cabs, 324 by omnibuses and cars, 327 by carriages, 1,168 by light carts, 135 by heavy carts, 119 by drays, 754 by vans, 2 by fire-engines, 111 by horses ridden, 38 by velocipedes, and 43 by other vehicles. A large proportion of the sufferers are not the foot passengers in the streets, but the persons riding and driving. Proceedings were taken against 171 persons for furious riding or driving; 160 were summarily convicted and 11 discharged.

6. EDUCATION, SCIENCE, AND ART.

Elementary Schools.

The Committee of Council on Education, in their annual report, state that in the year ending 31st August, 1886, the inspectors visited 19,022 day schools in England and Wales, to which annual grants were made, containing 28,645 departments under separate head teachers, and furnishing accommodation for 5,145,292 scholars. There were on the registers of these schools the names of 4,505,825 children, of whom 1,395,141 were under 7 years of age; 2,922,351 between 7 and 13; 148,289 between 13 and 14; and 40,044 above 14. Of these scholars 4,064,063 were present on the day of the inspectors' visit to their respective schools, and 3,438,425 were, on an average, in daily attendance throughout the year. The number of scholars whose names had been on the school registers for the last 22 weeks of the school year was, in infant schools and classes, 1,124,433; in schools and classes for older scholars, 2,697,283. The number of older scholars presented for examination in Standards I—VII was 2,445,562; and while of these 1,694,045 passed the prescribed tests without failure in any one of the three subjects, 92·43 (91·86) scholars out of every 100 examined passed in reading, 84·50 (83·83) in writing, and 81·04 (79·74) in arithmetic. The figures within brackets show the proportion who passed in the previous year. While the increase of the population during the year is estimated at 1·35 per cent., the accommodation has increased by 146,574 school places (or 2·93 per cent.); the scholars on the registers by 93,677 (2·12 per cent.); the average attendance by 67,100 (1·99 per cent.). The local effort which has resulted in this improvement may be measured by the continued support derived from voluntary contributions (742,597*l.*), by an advance in the contributions from rates to the maintenance of Board schools from 1,140,946*l.* to 1,169,150*l.* The school pence have risen from 1,791,084*l.* to 1,812,917*l.* The annual Government grants to elementary day schools rose in the year from 2,867,653*l.* to 2,958,705*l.*, or from 17*s.* to 17*s.* 2¼*d.* per scholar in average attendance. The night schools examined during the year were 841 in number; 26,089 scholars above 12 years of age were, on an average, in attendance each night; 32,144 scholars were qualified by attendance for examination. Of these, 23,866 were actually examined, and out of every 100 scholars so examined, 94·95 passed in reading, 77·61 in writing, and 51·19 in arithmetic. The additional subjects of examination were taken in 264 schools by 6,985 scholars, of whom 4,174 passed, 976 of them in two subjects.

Training Colleges.

The inspectors found 42,212 certificated teachers at work in the aided schools visited, while the 43 training colleges, from which the supply of such teachers is mainly recruited, were attended in 1886 by 3,259 students. These students (with a few exceptions), and 3,756 acting teachers, were examined for certificates in December last. At Midsummer, 1886, 5,111 candidates were examined for the 1,682 vacancies declared in the training colleges, of whom 3,379 passed creditably, and 1,646 are now in their first year of residence, along with 1,626 students of the second year.

Annual Parliamentary Grants for Education in England from 1842 to 1887.

1842–1844	£40,000	1868	£781,324
1845	75,000	1869	840,711
1846–1850	115,000	1870	914,721
1851	150,000	1871	1,458,402
1852	160,000	1872	1,551,560
1853	260,000	1873	1,299,803
1854	263,000	1874	1,356,852
1855	396,921	1875	1,548,563
1856	451,213	1876	1,707,055
1857	541,233	1877	1,910,000
1858	663,435	1878	2,149,208
1859	836,920	1879	2,481,168
1860	798,167	1880	2,535,967
1861	803,794	1881	2,683,958
1862	842,119	1882	2,749,863
1863	804,002	1883	2,938,930
1864	705,404	1884	3,016,167
1865	693,078	1885	3,181,875
1866	694,550	1886	3,302,772
1867	705,865	1887	3,422,989

School Supply.

The Committee of Council on Education state that in the twelve years ending on the 31st of December, 1882, building grants to the amount of 312,200*l.* have been paid by the Education Department, on the completion of the erection or enlargement of 1,572 schools, and 933 teachers' residences, affording new or improved accommodation for 280,146 scholars. These grants have been met by local contributions to the amount of 1,348,169*l.* The average cost of erecting voluntary schools, with residences for the teachers, has been about 5*l.* 7*s.* per scholar. This includes, as a rule, the value of the sites, very often given gratuitously in the case of schools of this class. The great majority of the remaining 4,767 voluntary schools, with seats for some 1,294,000 children, which have come under inspection since 1870, have been erected, enlarged or improved, without Government aid, at a cost to the promoters of at least 6,000,000*l.* The

school boards have availed themselves freely of the power of borrowing, on the security of the rates, given by the Acts of 1870 and 1873. Up to the 1st of April, 1887, the Education Department had sanctioned 6,776 loans, amounting to 19,177,921*l.* 14*s.* 8*d.* to 1,773 school boards (14,539,635*l.* 14*s.* from the Public Works Loan Commissioners; 4,638,286*l.* 0*s.* 8*d.* from the Metropolitan Board of Works and in the open market) by means of which new accommodation will be furnished for some 1,535,741 scholars. The estimated cost per child is thus about 12*l.* 9*s.* 9*d.* (including cost of sites), but the amount of the loan applied for is generally somewhat in excess of the sum eventually spent.

Progress of Education in Great Britain.

The following table exhibits the progress of education in Great Britain in schools under Government inspection from 1876 to 1886, distinguishing England and Wales from Scotland:—

Years ended 31st August.	Number of Schools Inspected.	Number of Children who can be Accommodated.	Average number of Children in Attendance.	Number of Children present at Inspection.
	England and Wales (including Isle of Man Schools from 1876 to 1877; and Roman Catholic Schools in Scotland, from 1876 to 1886).			
1876	14,875	3,483,789	2,007,732	2,448,299
1877	15,187	3,653,418	2,150,683	2,633,198
1878	16,293	3,942,337	2,405,197	2,944,127
1879	17,166	4,142,224	2,594,995	3,122,672
1880	17,614	4,240,753	2,750,916	3,268,147
1881	18,062	4,389,633	2,863,535	3,372,990
1882	18,289	4,538,320	3,015,151	3,542,742
1883	18,540	4,670,443	3,127,214	3,705,388
1884	18,761	4,826,738	3,273,124	3,925,045
1885	18,895	4,998,718	3,371,325	3,992,074
1886	19,022	5,145,292	3,438,425	4,064,063
	Scotland (exclusive of Roman Catholic Schools, included above). from 1876 to 1886.			
1876	2,912	462,986	332,545	382,224
1877	2,931	535,949	360,413	417,699
1878	2,998	563,481	377,257	439,021
1879	3,003	585,629	385,109	447,801
1880	3,056	602,054	404,618	470,581
1881	3,074	612,483	409,966	475,021
1882	3,073	619,086	421,265	490,372
1883	3,090	633,701	433,137	498,514
1884	3,131	655,672	448,242	518,844
1885	3,081	660,101	471,175*	521,417
1886	3,388	691,405	476,890	542,902
	Total for Great Britain.			
1876	17,787	3,946,775	2,340,227	2,830,523
1877	18,118	4,189,367	2,511,096	3,050,897
1878	19,291	4,505,818	2,782,454	3,383,148
1879	20,169	4,727,853	2,980,104	3,570,473
1880	20,670	4,842,807	3,155,534	3,738,728
1881	21,136	5,002,116	3,273,501	3,848,011
1882	21,362	5,157,406	3,436,416	4,033,114
1883	21,630	5,304,144	3,560,351	4,203,902
1884	21,892	5,482,410	3,721,366	4,443,889
1885	21,976	5,658,819	3,842,500	4,513,491
1886	22,410	5,836,697	3,915,315	4,606,965

Elementary Schools (Relative Cost).

The following table shows the amount of the income, expenditure, and grant of the Voluntary and Board schools in certain localities during 1886:—

* *The figures for* 1885 *are those of Schools on the Annual Grant List.*

	Income per scholar in average attendance from		Expenditure per scholar in average attendance.		Grant earned per scholar in average attendance
	School pence.	Voluntary contributions.	For salaries.	Total.	
Voluntary Schools.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Church of England	0 10 7¾	0 7 2¼	1 8 7¼	1 16 5½	0 16 8½
Wesleyan..	0 16 1¾	0 2 4½	1 9 3½	1 16 9½	0 17 5¾
Roman Catholic..	0 9 3½	0 7 1½	1 3 0¾	1 13 0	0 17 0¼
British and Undenominational	0 13 7	0 5 9¼	1 9 9	1 18 0	0 17 3¼
Birmingham	0 10 5	0 3 9¼	1 4 6½	1 11 11	0 17 3
Liverpool..	0 12 9¾	0 2 7½	1 4 11½	1 13 3	0 17 5½
London	0 13 4½	0 9 7¾	1 11 8½	2 3 5¾	0 17 3¼
Manchester	0 12 8	0 4 11¼	1 5 7½	1 15 5½	0 17 7
Sheffield	0 13 8¼	0 2 7¾	1 5 11¼	1 13 6	0 15 8¼
England and Wales	0 11 2¼	0 6 9	1 8 4	1 16 4¼	0 16 10¼
		Rates.			
Board Schools.					
Birmingham	0 5 11¾	0 15 10	1 12 2¾	2 0 10½	0 18 4
Bradford	0 15 2¼	0 11 3½	1 15 11½	2 4 5¼	0 18 5¼
Brighton	0 11 7¼	0 18 7	1 19 3¼	2 10 3	0 18 7
Bristol	0 7 8¾	0 14 0¼	1 10 4	2 0 3	0 17 3½
Hull	0 9 6¼	0 3 9¾	1 4 3¾	1 9 9¾	0 17 2¾
Leeds	0 9 8¼	0 15 2¼	1 12 3½	2 2 0¾	0 18 9
Liverpool..	0 13 1½	0 13 3¾	1 15 2	2 5 9½	0 19 7
London	0 7 6¾	1 17 4¼	2 10 1¾	3 3 4½	0 18 6¾
Manchester	0 16 0½	0 7 8¾	1 9 4½	2 1 3¼	0 18 3¼
Sheffield	0 11 2¼	0 9 10¾	1 10 9¼	1 19 4¾	0 17 5¾
England and Wales	0 9 1¼	0 18 4¼	1 15 1½	2 4 11¾	0 17 10

School Maintenance.

The following table shows the cost of "maintenance" per child in average attendance in the Public Elementary Schools of England and Wales in 1886:

1886.	England and Wales.	London.	England, including London.	England, excluding London.	Wales.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
In Board Schools ..	2 4 11¾	3 3 4½	2 5 7¼	1 19 4¾	1 17 7¼
In Voluntary Schools ..	1 16 4½	2 3 5¾	1 16 6	1 15 11	1 13 9
These charges were met—					
In Board Schools—					
By the ratepayers ..	0 18 4¼	1 17 4½	0 18 10¾	0 12 4¼	0 12 4¾
By the children ..	0 9 1¼	0 7 6¾	0 9 2¾	0 9 9¾	0 7 10¼
By endowment ..	0 0 0¾	0 0 0¼	0 0 0¾	0 0 0¾	0 0 0¼
By miscellaneous receipts	0 0 6½	0 0 10¼	0 0 6¾	0 0 5¾	0 0 2¼
In Voluntary Schools—					
By the subscribers ..	0 6 9	0 9 7¾	0 6 8¾	0 6 6	0 6 8¾
By the children ..	0 11 2¼	0 13 4½	0 11 3¾	0 11 1½	0 8 8¾
By endowment ..	0 1 4¾	0 2 4	0 1 4¾	0 1 3¾	0 1 1½
By miscellaneous receipts	0 0 5	0 0 8¾	0 0 5	0 0 4¾	0 0 3

Singing in Elementary Schools.

The Committee of Council on Education in their last report state that the grant at the rate of 1*s.* for singing by note has been earned in 6,936 departments (31·5 per cent.), with an average attendance of 1,181,724 (47·95 per cent.); at the rate of 6*d.* for singing by ear, in 14,939 departments (67·85 per cent.), with an average attendance of 1,275,426 (51·75 per cent.). The grant was not paid in 144 departments (with an average attendance of 7,421), in 99 of which singing was not a subject of instruction. The average "numbers for payment" in each department were in those paid at the rate of 1*s.*, 170; in those paid at the rate of 6*d.*, 85; and for each department where the grant was not paid, 52.

Teaching Power in Elementary Schools.

The 19,022 elementary day schools in England and Wales, inspected in 1886, provided accommodation, in 28,645 departments, for 5,145,292 scholars, and 42,212 certificated teachers were employed in their instruction. The average daily attendance in these schools amounted to only 3,438,425. There were on the 31st of December, 1869, 12,842 pupil-teachers, 1,236 assistant teachers, and 12,027 certificated teachers at work in schools under inspection. These numbers have now risen to 27,804 pupil-teachers, 17,439 assistant, and 42,212 certificated teachers; while the pupil-teachers in the first year of their service have increased from 3,392 in 1869 to 6,359 in 1886.

Teachers' Salaries.

The average salary of a certificated master, which in 1870 was 94*l.* 2*s.* 1*d.*, is now 120*l.* 17*s.* 6*d.*; that of a schoolmistress, was 57*l.* 11*s.* 1*d.* in 1870, and is now 74*l.* 4*s.* 11*d.* In addition to their other emoluments, 6,044 out of 16,066 masters, and 5,208 out of 24,443 mistresses, are provided with residences free of rent; these averages are calculated upon the whole of the certificated teachers, whether principal or assistant. In the metropolitan district, in the past year, the average salary of 375 masters (principal teachers) in voluntary schools was 150*l.* 3*s.* 4*d.*, and that of 355 principal masters in board schools 269*l.* 14*s.* 1*d.*; while 683 schoolmistresses in board schools enjoyed an average income of 190*l.* 14*s.* 3*d.* as compared with 87*l.* 16*s.* 9*d.* that of 807 teachers in voluntary schools. The salaries of 6 masters in voluntary schools, and of 127 in board schools, amounted to 300*l.* a year and upwards, while 5 schoolmistresses in voluntary, and 274 in board schools, had salaries of 200*l.* and upwards.

Female Teachers.

There is a great and increasing tendency to employ female teachers in elementary schools. In 1869, for every 100 teachers of each class, 48 certificated teachers, 60 assistant teachers, and 57 pupil-teachers were females; these proportions have increased in 1886 to 60 certificated teachers, 69 assistant teachers, and 73 pupil-teachers. The number of female pupil-teachers in 1869 was 7,273; they now number 20,292, an increase of 179 per cent. The male pupil-teachers, who numbered 5,569 in 1869, have increased to 7,512, or by about 35 per cent.

The National Gallery.

As nearly as can be calculated, the National Gallery was visited by 842,380 persons on the public days during the year, showing a daily average attendance on such days (207 in number) of 4,069. These numbers must, however, be only regarded as approximate, no accurate means of checking them being in use. On students' days (Thursdays and Fridays), when the number of visitors entering by payment is registered by a turnstile, 47,934 persons were admitted between the 1st of January and the 31st December, 1886; the admission fees (at 6*d.* each) amounting to 1,198*l.* 7*s.*, as compared with 1,309*l.* 9*s.* received in 1885. The amount annually realised by admission fees is paid into Her Majesty's Exchequer under the head of "extra receipts." The total number of students' attendances at the Gallery on Thursdays and Fridays throughout the year was 26,127. Seventeen pictures were purchased during the year 1886, and 52 have been added to the Gallery by bequest or presentation. The total number of pictures now contained in the public rooms of the gallery is about 1,020, exclusive of water colour drawings. Among the presentations to the Gallery is one from the Earl of Crawford and Balcarres of a Madonna and Child by Domenico Veneziano, and an interesting series of 45 small water-colour copies by the late W. West, from pictures by old masters, principally in the Prado Gallery at Madrid. Independently of partial studies, 899 oil-colour copies of pictures have been made, viz., 588 from the works of 64 old masters, and 311 from the works of 37 modern painters. A new staircase and new rooms have been added to the gallery, which will afford sufficient wall space for a more convenient and systematic distribution of the pictures which form the present National Collection.

7. EMIGRATION.

The Emigration and Immigration of 1886.

The chief feature in the emigration and immigration for the year 1886 is the considerable increase in the amount in place of the diminution noticed in each of the two preceding years, at the same time the return current of immigration has continued to diminish, thereby enhancing the effect on the balance of the population of this increase in the number of passengers from the United Kingdom to places out of Europe. The increase of emigration is especially marked among those of foreign origin, the number returned in 1886 being 94,370, as against 53,783 in 1885, showing an increase of 75 per cent. The increase of emigrants of British and Irish origin only on the 1885 figures is one of 12 per cent. only. The proportion of British and Irish emigration to population has advanced from 0·57 per cent. in 1885 to 0·63 per cent. in 1886, a figure surpassed in each of the years 1880–84, which were years of large emigration. As a general rule, an increase of immigration accompanies an increase of emigration, and reaches its maximum in those years when the emigration begins to fall off from the maximum it has itself reached, both in succeeding years declining. The last maximum year of emigration was 1883, and the last maximum year of immigration, 1884, since which years both have declined, emigration however taking a turn upwards in the year 1886, as compared with 1885, which was a minimum year, while 1886 is as yet the minimum year of immigration. The proportion of *nett* emigration to population has risen from 0·34 per cent. in 1885 to 0·42 per cent. in 1886, which is also the figure given for 1884.

Comparing the figures as to emigration and immigration for 1885 and 1886, we have the following comparison:—

EMIGRATION IN 1885 AND 1886.

—	Total including foreigners.	Emigrants of British and Irish origin only.
Emigrants, 1885 ..	264,385	207,644
,, 1886 ..	330,801	232,900
Increase, 1886..	66,416	25,256

IMMIGRATION.

—	Total including foreigners.	Immigrants of British and Irish origin only.
Immigrants, 1885	113,549	85,468
,, 1886	108,879	80,018
Decrease, 1886 .	4,670	5,450

Sixteen Years' Emigration.

The following table shows the number of emigrants of British origin only, from the United Kingdom to countries out of Europe, from 1871 to 1886:—

YEARS.	EMIGRANTS TO				
	British North American Colonies.	United States.	Australia and New Zealand.	Other Places.	Total.
1871	24,954	150,788	11,695	5,314	192,751
1872	24,382	161,782	15,248	9,082	210,494
1873	29,045	166,730	25,137	7,433	228,345
1874	20,728	113,774	52,581	10,189	197,272
1875	12,306	81,193	34,750	12,426	140,675
1876	9,335	54,554	32,196	13,384	109,469
1877	7,720	45,481	30,138	11,856	95,195
1878	10,652	54,694	36,479	11,077	112,902
1879	17,952	91,806	40,959	13,557	164,274
1880	20,902	166,570	24,184	15,886	227,542
1881	23,912	176,104	22,682	20,304	243,002
1882	40,441	181,903	37,289	19,733	279,366
1883	44,185	191,573	71,264	13,096	320,118
1884	31,134	155,280	44,255	11,510	242,179
1885	19,838	137,687	39,395	10,724	207,644
1886	24,745	152,710	43,076	12,369	232,900

General Statement of Immigration in 1886.

The following table shows the number of persons who arrived in this country from places out of Europe, so far as recorded, showing their nationality and the countries whence they came, in 1886:—

Nationality.	United States.	British North America.	Australasia.	C. of Good Hope and Natal.	All other places.	Total for 1886.	Total for 1885.
British and Irish .	52,909	7,167	8,980	3,842	7,120	80,018	85,468
Foreigners ..	25,799	365	386	625	1,299	28,474	27,006
Not distinguished	—	—	—	—	387	387	1,075
Total.. ..	78,708	7,532	9,366	4,467	8,806	108,879	113,549

Sex and Conjugal State of British and Foreign Emigrants.

The following table gives an account of the number of emigrants of British and Foreign nationality of each sex leaving the United Kingdom in 1886, and the conjugal condition of the adults:—

BRITISH.

Adults:		
Married	Males	22,616
	Females	28,356
Single	Males	96,372
	Females	47,443
Conjugal condition not stated .	Males	—
	Females	—
Total		194,787
Children from 1 to 12 years and Infants .	Males	19,790
	Females	18,323
British Total		232,900

FOREIGN.

Adults:		
Married	Males	32,583
	Females	39,437
Single	Males	141,396
	Females	63,030
Conjugal condition not stated . .	Males	—
	Females	—
Total adults		276,446
Children from 1 to 12 years and infants .	Males	28,697
	Females	25,658
Grand total		330,801

Occupation of Emigrants.

The following is a statement of occupations of adult passengers of each sex leaving the United Kingdom in 1886, so far as can be ascertained:—

Occupation.	Total.
Adult Males:	
Agricultural Labourers, Gardeners, Carters, &c.	16,719
Bakers, Confectioners, &c. . . .	888
Blacksmiths and Farriers . . .	358
Boot and Shoe Makers	554
Braziers, Tinsmiths, Whitesmiths, &c.	104
Brick and Tile Makers, Potters, &c.	104
Bricklayers, Masons, Plasterers, Slaters, &c.	2,499
Builders	191
Butchers, Poulterers, &c. . . .	366
Cabinetmakers and Upholsterers .	135
Carpenters and Joiners	3,948
Clerks and Agents	3,916
Clock and Watch Makers and Jewellers.	167
Coachmakers and Trimmers . . .	47
Coopers	140
Domestic Servants	594
Engine Drivers, Stokers, &c. . .	211
Engineers	1,092
Farmers and Graziers	10,325
Founders, Iron and Brass Moulders, &c.	406
Gentlemen, Professional Men, Merchants, &c.	13,619
Labourers, General	62,680
Mechanics	12,684
Millers, Maltsters, &c.	177
Miners and Quarrymen	6,120
Painters, Paperhangers, Plumbers, and Glaziers	714
Printers	171
Saddlers and Harness Makers . .	58
Sawyers	48
Seamen	579
Shipwrights	49
Shopkeepers, Shopmen, Warehousemen, &c.	3,202
Smiths, General	315
Spinners and Weavers	526
Tailors	1,179
Tanners and Curriers	48
Turners	72
Wheelwrights and Millwrights . .	70
Army and Navy:—Officers . . .	261
,, ,, Men	47
Other Trades and Professions . .	2,304
Males:—Occupation not stated . .	26,292
Adult Females:	
Domestic and Farm-Servants, Nurses, &c.	25,695
Gentlewomen and Governesses . .	152
Milliners, Dressmakers, Needlewomen, &c.	827
Shopwomen	44
Spinners and Weavers	225
Other Trades and Professions . .	447
Females:—Occupation not stated .	75,077
Total Adults.	276,446

8. THE POST OFFICE.

Revenue and Expenditure.

The gross revenue and expenditure for the year ended 31st March, 1887, were as follows:—

	£	£	Increase (+) or decrease (−) on 1885–6.
The gross Revenue for the year was 10,715,978*l.*, arrived at thus:—			
Postages on letters, parcels, post cards, newspapers, &c.		8,186,519	+299,621
Commission on money orders	142,290		
Commission on postal orders	139,389		
Value of unclaimed money orders	3,000		
		284,679	+ 973
Savings bank profits		357,556	+ 36,546
Revenue from telegraphs		1,887,224	+ 99,973
		10,715,978	
The expenditure, including expenses incurred by other Departments, was:—			
For postal service, including money order and postal order business	5,253,336	..	+424,813
,, packet service	626,805	..	− 31,396
,, savings bank	290,555	..	+ 34,154
,, telegraph service*	2,030,647	..	+203,789
		8,201,343	
The net revenue was, therefore		2,514,635	−194,247

The Work of 1886.

The estimated number of letters, &c., delivered in the United Kingdom was as follows:—Letters, 1,459,900,000; post cards, 180,100,000; book packets and circulars, 368,900,000; newspapers, 151,200,000; total, 2,160,100,000; parcels, 32,860,000—grand total, 2,192,960,000—being an increase of 4·9 per cent. upon the previous year. About 84 per cent. were delivered in England and Wales (28 per cent. being delivered in the London postal district alone), 9·0 per cent. in Scotland, and 6·0 per cent. in Ireland. The number of registered letters was 10,779,555, a decrease of 3·1 per cent. This continued decrease is owing mainly, no doubt, to the extended use of Postal Orders for purposes of remittance.

Post Offices and Letter Boxes.

New post offices have been opened in 386 places, and about 764 letter boxes have been added, making the total number of receptacles 35,380, of which 17,191 are post offices. 536,000*l.* was spent to provide necessary accommodation.

Officers Employed.

The total number of officers on the permanent establishment of the Department is about 54,800; the number added during the year having been 3,356. The number of women included in this total is 767. Besides the foregoing there are, it is estimated, about 47,000 persons, of whom about 15,800 are females, employed by postmasters and receivers throughout the country to aid in carrying on the business of the Department. Most of these persons have private occupations and are employed on postal duty for only a part of the day. The list of retired officers in receipt of pensions shows a total of 3,356, whose pensions amount to 176,164*l.* The conduct and health of the staff generally continues good.

Parcel Post.

In the Parcel Post service, the reduction of the rates, the extension of the weights, and the scheme of insurance introduced on the 1st of May, 1886, have had a marked effect on the business. The total number of parcels posted during the year was

* The annual interest on the capital sum of 10,880,571*l.* raised by the Government for the purchase of the Telegraphs, amounting to 326,417*l.*, is not borne on the Post Office votes.

32,860,154, an increase of upwards of 24 per cent. on the previous year, apportioned thus:—England and Wales, 27,237,000; Scotland, 3,430,000; Ireland, 2,193,000. The delivery of parcels in London by hand carts instead of by vans has been much extended, and is attended with a considerable saving of expense without any loss of efficiency. The Parcel Post is much used for the transmission of fruit and flowers, and numerous parcels are despatched from the Scilly Islands by market gardeners to Covent-garden Market, where they arrive in time for delivery before eight o'clock in the morning. Upwards of 14,000 parcels containing primroses reached London on the 18th and 19th of April. The Parcel Post has been extended to over 55 Colonies and foreign countries. The total number of parcels despatched to the Colonies and foreign countries during the year was 242,864, and the number received was 150,656. The largest number was transmitted between this country and Germany, India, and Belgium, the numbers being as follows:—Germany, despatched to 82,400, received from 62,200; India, despatched to 46,000, received from 37,700; Belgium, despatched to 14,000, received from 6,900. A system was commenced on the 1st of May, 1886, for the insurance and compensation in case of loss or damage of registered letters and of parcels, for fees of 1*d.* or 2*d.* each, and up to the 31st of March 105,677 registered letters had been insured, the fees amounting to 650*l.*, and 264,741 parcels, the fees on which amounted to 1,311*l.*; while the amounts paid in compensation were—for registered insured letters, 13*l.* 13*s.* 6*d.*; insured parcels, 140*l.*

Postal Curiosities.

The number of letters, post cards, book packets, newspapers, parcels, &c., received in the Returned Letter Offices was 14,215,900, an increase of upwards of 9 per cent. Of this number 447,828 were unreturnable, 178,683 were registered or contained enclosures of value, and 27,928 were wholly unaddressed. Of these letters posted without any address 1,628 contained money and cheques, &c., amounting to 4,664*l.* It is remarkable that the number of book packets received in the Returned Letter Offices was 937,046 above the number in the previous year. A somewhat curious occurrence happened in a Gloucestershire post office, in consequence of leakage from a tin of essence of lemon, sent by Parcel Post. A swarm of bees, attracted by the syrup, entered the office by a window and settled on the spot where the essence was spilt, and although prompt efforts were made to eject them, they continued to frequent the office for a fortnight. At another office a packet of live mice was stopped, as contrary to regulation, and the addressee, on being communicated with, took a journey of upwards of 40 miles to obtain the mice.

Savings Bank.

The Post Office Savings Bank, which commenced operations on the 16th of September, 1861, completed a quarter of a century's work in September. On the 31st of December, 1862 (the end of the first complete year), the total amount, inclusive of interest, standing to the credit of depositors was 1,698,221*l.* On the 31st of December last it was 50,874,338*l.*—a result which proves the value attached by the public to this institution. The increase over the year 1885 was 3,176,500*l.* In addition to this, the balance of Government Stock held by 35,305 depositors at the close of the year was 2,896,941*l.*, being an increase of 444,689*l.* over the previous year, making the total sum due to depositors 53,771,279*l.*, distributed over 3,731,421 separate accounts. The deposits were 6,562,395 in number, amounting to 15,696,852*l.*, as compared with 6,474,484 in number, amounting to 15,034,694*l.* in 1885; and the withdrawals numbered 2,390,655, amounting to 13,689,943*l.*, as compared with 2,280,062*l.*, amounting to 13,202,742*l.*, in 1885. The sum credited to depositors for interest was 1,169,590*l.*, an increase of 77,478*l.* over the previous year. The greatest number of deposits made in one day was 50,547, on the 30th of January, amounting to 116,553*l.*; but the largest amount deposited in one day was 125,594*l.*, which was deposited by 34,301 persons on the 1st of January. The greatest number of withdrawals in one day was 21,665, amounting to 64,440*l.*, on the 21st of December; but the largest amount withdrawn in one day was 68,046*l.*, which was withdrawn by 11,933 persons on the 14th of December. The daily average number of deposits was 21,445, and the amount 51,296*l.*; and of withdrawals 7,812, amounting to 44,738*l.* The average amount of each deposit was 2*l.* 7*s.* 10*d.*, and of each withdrawal, 5*l.* 14*s.* 6*d.* The number of new accounts opened during the year was 758,270, as compared with 750,862 in 1885, and the accounts closed were 562,499, as compared with 548,887.

Investments in Stock.

The Government Stock investments were 16,563 in number, and the Stock purchased was 841,121*l.* in amount, as compared with 17,133 investments and 859,050*l.* Stock purchased in 1885, being a decrease of 570 in number, and 17,929*l.* in amount of Stock; while the sales numbered 8,918, amounting to 389,965*l.* Stock, as compared with 7,443 sales, amounting to 326,445*l.*, in 1885—an increase of 1,475 in number, and 63,520*l.* in amount. The number of Stock Certificates obtained was 59, representing 7,300*l.*

Stock as compared with 68, representing 6,900*l.* Stock, in 1885. The average amount of Stock held by each depositor was 82*l.* 1*s.* 1*d.*, as compared with 80*l.* 2*s.* 11*d.* in 1885.

Government Annuities and Insurance.

The Government life insurance and annuity business shows slight increase. The life insurance contracts granted were 506 in number, and 34,188*l.* in amount, as compared with 457 contracts for 34,768*l.* in the year 1885. The immediate annuities purchased (exclusive of those purchased by the Board of Trade for aged merchant seamen) were 718 in number and 17,031*l.* in amount, as compared with 611 annuities, amounting to 14,972*l.*, in 1885. The number of deferred annuities was 87, amounting to 1,772*l.*, as against 103 deferred annuities, amounting to 1,694*l.*, granted in 1885.

Money Orders.

The reduction in the maximum charge for inland money orders from a shilling to sixpence has converted the decrease in this class of business into an increase of 287,363*l.*, as compared with a falling-off of over a million and a-half in the previous year. The total number of inland orders was 9,762,562, and the total amount 22,262,708*l.* The increase to the Colonies and foreign countries was over 90,000 in number, and upwards of 234,000*l.* in amount. 31,608,711 postal orders were purchased to the amount of 12,959,000*l.*, or 2,169,000*l.* more than in the year before.

Telegrams.

The first complete financial year during which the reduced rates for Inland Telegrams were in operation expired on the 31st of March, and it is interesting to note the effect upon the number of messages and upon the revenue. Separating the ordinary inland messages sent in that period from railway, press, official, and foreign telegrams, which are not affected by the reduced rate, and of which there were over ten millions, it appears that the number of messages despatched was 40,137,175 in 1886–87, compared with a total of 30,087,869 in 1885–86, and that the revenue produced was 1,354,879*l.* as compared with 1,277,606*l.* in the previous year, showing a growth of over ten millions, or 33 per cent. in the number of messages, and over 77,000*l.*, or 6 per cent., in the revenue. The London local messages alone show an increase of 50 per cent., the total number being about 3,800,000. The expenses of this service, however, far exceed the receipts, and the deficit, after including the interest payable for the capital borrowed, amounted to 469,840*l.* New telegraph offices have been opened at 232 Post offices throughout the United Kingdom, and, including 1,542 railway station offices, there are now 6,514 public telegraph offices. A new line from London to Nevin, on the coast of Wales, 263 miles long, and a cable from thence to Ireland, have been opened, the total cost of construction being 40,700*l.* Copper wire of the weight of 150 lb. per mile has been used with marked success, as by this means a rate of 450 words a minute has been attained, as compared to a rate of 350 words a minute on iron wire, the highest previously recorded on any line. The use of copper wire is likely to be advantageous, as enabling a greater amount of work to be got out of the plant, and as possibly avoiding the necessity of costly relay stations. On the 26th of December, 1886, the most serious and widely spread snowstorm that has ever been experienced in this country, as regards damage done to telegraphs, occurred. On the morning of that day only seven provincial circuits were workable from the Chief Office in London. All the branch offices in London, served by the overhead wires, were cut off from communication. Fortunately, however, there were 315 offices in London served by underground wires, which remained undisturbed. The work of repairing the damage throughout the country was retarded by the recurrence of severe weather, and occupied a considerable time; but the inconvenience to the public was very shortly reduced to a minimum, as the multiplication of cross-country circuits in recent years enabled communication to be established with various towns by devious and eccentric routes, and the use of fast speed apparatus made it possible to obtain from a few wires the normal work of many.

Newspapers, Book Packets and Circulars.

The following table shows the estimated number of newspapers, book packets and circulars delivered in the United Kingdom in each year from 1880 to the present time:—

Year.	England and Wales.	United Kingdom.
	Millions.	Millions.
1880–81.	307	374
1881–82.	338	412
1882–83.	353	429
1883–84.	359	437
1884–85.	380	464
1885–86.	402	490
1886–87.	429	520

9. MISCELLANEOUS.

Railway Progress in England and Wales.

The following table shows the total length, capital, passengers conveyed, receipts, and working expenses of railways in England and Wales from 1873 to 1886:—

Years.	Length of lines open at the end of each year.	Total capital paid up (shares, loans, &c.) at the end of each year.	Total No. of passengers conveyed (excluding season-ticket holders).	Gross receipts.	Total of working expenses.	Net traffic receipts of passengers and goods.
	England and Wales.					
	Miles.	£	No.	£	£	£
1873 ..	11,369	490,018,994	401,465,086	48,857,278	25,813,377	23,043,901
1874 ..	11,622	508,726,428	423,083,941	50,210,136	27,534,723	22,675,413
1875 ..	11,789	527,090,667	451,032,641	51,726,416	28,220,495	23,505,921
1876 ..	11,989	544,831,959	477,146,165	52,476,319	28,466,366	24,009,953
1877 ..	12,098	557,878,925	490,351,707	53,057,499	28,635,033	24,422,466
1878 ..	12,229	579,387,630	503,982,893	53,142,875	28,099,438	25,043,437
1879 ..	12,547	593,155,665	503,652,787	52,479,379	27,112,853	25,366,526
1880 ..	12,656	602,242,578	540,669,175	55,795,186	28,577,111	27,218,075
1881 ..	12,807	616,437,449	561,224,291	57,240,132	29,685,896	27,554,236
1882 ..	13,052	635,186,791	586,689,830	59,092,802	30,927,457	28,165,345
1883 ..	13,202	650,945,834	612,401,758	60,521,638	31,819,248	28,702,390
1884 ..	13,340	665,055,379	621,131,188	60,099,011	31,732,486	28,366,525
1885 ..	13,612	677,180,162	622,169,944	59,320,905	31,474,849	27,846,056
1886 ..	13,678	687,769,822	641,502,033	59,277,628	31,221,367	28,056,261

Coal, Iron, and Copper in the United Kingdom.

The following table shows the quantity of coal, iron, and copper produced in the United Kingdom, 1872-1886:—

Year.	Coal.	Pig Iron.	Fine Copper.
	Tons.	Tons.	Tons.
1872	123,497,316	6,741,929	5,703
1873	127,016,747	6,566,451	5,240
1874	125,067,916	5,991,408	4,927
1875	131,867,105	6,365,462	4,593
1876	133,344,826	6,555,997	4,694
1877	134,610,763	6,608,664	4,486
1878	132,654,887	6,381,051	3,952
1879	134,008,228	5,995,337	3,462
1880	146,818,622	7,749,233	3,662
1881	154,184,300	8,144,449	3,875
1882	156,499,977	8,586,680	3,464
1883	163,737,327	8,529,300	2,620
1884	160,757,779	7,811,727	3,350
1885	159,351,418	7,415,469	2,773
1886	157,518,482	7,009,754	1,471

Postal Telegrams.

The number of Telegraph Messages despatched in the year 1886-7 in England and Wales was 33,110,441, in Scotland 5,106,774, in Ireland 2,816,680, and in the United Kingdom 50,243,639. The total for the United Kingdom in the year 1885-86 was 39,146,283. From the 1st of October, 1885, the minimum charge for an Inland telegram was reduced from one shilling to sixpence.

Land Tax and Inhabited House Duty.

The following table shows the net receipt in the years ended 31st March, 1887, and 1886:—

——	Mar. 31, 1887.	Mar. 31, 1886.	Increase +, or decrease —.
	£	£	£
Land-tax ..	1,065,358	1,023,196	+ 42,162
Inhabited house duty	1,954,011	1,867,377	+ 86,634
	3,019,370	2,890,573	+128,796

Income Tax.

The following table shows the net receipt in the years ended 31st March, 1887 and 1886:—

	1887.	1886.	Increase.
	£	£	£
Mar. 31..	16,111,173	15,247,312	563,861

Australian Rainfall.

The following information respecting the average rainfall in Australia is extracted from a recent report of the United States Consul at Sydney:—"So much is said about the drought of Australia that very few persons are aware that the average rainfall in all the Colonies will compare favourably with that of other countries. In New South Wales, a territory of 310,000 square miles, the average rainfall is 24 inches; at Sydney it is about 50 inches; at Eden it is 70 inches; but in the flat country it is only 10 inches. The average rainfall in Queensland is about the same as that of New South Wales. The former Colony, however, is more subject to tropical rains than the latter. The rainfall, therefore, in Queensland rises in some districts, as, for instance, Johnstone River, to 123 inches, in other places the average is as low as 8 inches. At Adelaide, South Australia, where there are no high coast ranges to arrest the drift of the clouds, the rainfall is as low as 20 inches. At Port Augusta it falls to 8 inches. At Perth, Western Australia, the average is 31 inches, but at Canaroon, in the same Colony, it does not average more than 6 inches. At Eucla it is 10 inches. The rainfall in Victoria varies from 63 inches at Cape Schanck to 12 inches at Wycheproof. At Melbourne it is about 25 inches. The trouble, however, in Australia, is that whenever there is a diminished rainfall the effects are much more disastrous than in other places, on account of the great heat of the sun and the absence of more general cultivation. A diminished rainfall of 50 per cent. has at times desolated vast tracts of country. The report of the New South Wales Royal Commission, however, states that while one part of the country suffers from a diminished rainfall other parts have an average supply, and others again may be favoured with an abundant fall. In the basin of the Darling, excluding the hilly portion, the rainfall is 12·81 inches. In the plains between the Lachlan and the Murrumbidgee it is 16·33 inches, and in the corresponding district between the Murrumbidgee and the Murray it is 14·56. These rainfalls would be sufficient for ordinary crops of cereals if they came at proper periods, but the report of the Commission admits that they do not. It says that as a rule in these districts when rain is most needed it comes in such small quantities as to be of little or no benefit to vegetation."

South Australian Railways.

The following information respecting the development of the South Australian railways is taken from a Parliamentary paper laid before the South Australian Assembly:—"On June 30th last (1887) 1,419¾ miles of railway had been constructed, at a cost, including discount on sale of bonds, of 9,419,917*l*. The working expenses of the year were 385,000*l*.; the revenue was 592,450*l*.; and the net profit 207,450*l*. This represents 2·46 per cent. on the cost of the average mileage open for traffic during the year. There were in course of construction on the same date 353¼ miles, representing an expenditure of 2,069,000*l*. The lines are all upon the narrow gauge, and are represented by the Palmerston to Pine Creek, 146½ miles; Hergott to Strangways Springs, 102 miles; and Strangways Springs to the Peake, 105 miles."

Sales of Land in South Australia.

The following extract from a Parliamentary paper presented to the South Australian Assembly by the Treasurer, with respect to sales of land in South Australia, states that:—"During the 12½ years from 1875 to June 30, 1887, 343,139 acres of land were sold for cash, the amount of purchase-money being 610,169*l*., and the average price 1*l*. 15*s*. 6*d*. per acre. During the same period 3,727,058 acres were sold on credit, the purchase-money representing 4,414,991*l*. The amount received on account of interest and purchase for credit sales during the 12½ years was 3,986,571*l*. There still is to fall due on lands held under credit agreement 2,671,226*l*. From the passing of the Credit Act of 1868–69 to June 30, 1887, 5,669,823 acres have been alienated, but the inclusion of the area included in sales on credit which have not been completed swells the total up to 7,944,424 acres."

Horse Breeding in Foreign Countries.

France.

According to the reports forwarded to the Foreign Office Government establishments in France are now administered under a Law passed on the 29th May, 1874. According to this enactment the number of State depôts for the keeping of stallions is fixed at twenty-two, under the superintendence of an "Inspecteur-Général des Haras," assisted by a Council of twenty-four, called "Conseil Supérieur des Haras," and a Commission, entitled "Commission du Stud-Book." A school, called "l'École des Haras," has also been established at Pompadour (Corrèze) on the distinct understanding that the graduates shall alone be entitled to appointments as officers of studs. In consequence of the low state to which the Government establishments hitherto in existence had been reduced by war and other calamities, it was arranged

that the number of stallions in each depôt should be increased by 200 every year till a supply of 2,500 horses was attained; and the credits voted as premiums for breeding were brought up, by annual additions of 100,000 fr. (4,000*l.*), to 1,500,000 fr. (60,000*l.*). It was further determined that a special sum of 50,000 fr. (2,000*l.*) should be set apart for encouraging the breed of Arab and Anglo-Arab stallions. The maximum of 1,500,000 fr. was attained in 1881. The annual grant of moneys made by the French Government for the service of horse-breeding establishments have been gradually increased. The Budget of 1885 estimates the expenditure as follows:—

	Francs.
Salaries of officials and staff of the Haras and depôts of stallions . . .	1,633,830
Food, clothing, and establishments generally . .	2,670,995
Purchase of horses . .	1,583,200
Prizes for racing and breeding, and general services	2,250,000
Total . . .	8,138,025 = £325,520

If we deduct from this sum the receipts from the hiring of stallions, which, in 1882 and previous years, amounted to 1,395,000 fr., we find a total annual expenditure by the State of 6,743,025 fr. (269,720*l.*). The number of depôts for stallions is twenty-one, the twenty-second establishment being the "École des Haras." These depôts are concentrated in six centres:—1st Centre: Blois, Compiègne, and Montier-en-Der. 2nd Centre: Angers, Le Pin, and St. Lô. 3rd Centre: Hennebont, Lamballe, La Roche-sur-Yon, and Saintes. 4th Centre: Libourne, Pau, Tarbes, and Villeneuve-sur-Lot. 5th Centre: Aurillac, Perpignan, and Rodez. 6th Centre: Annecy, Besançon, Cluny, and Rosières. The stallions of the various depôts are dispersed to fixed stations every year, and there placed at the disposal of the owners of mares. The lists of stations and the charges for covering are furnished annually to the Préfecture of each Department in France, and made public by order of the Préfet. The purchases of stallions for the depôts are made in autumn in France and abroad by Commissions of General Inspectors, presided by the "Directeur des Haras." Statistics show that the number of mares annually covered is about 600,000, for which a supply of 12,000 stallions is required. The State, as before observed, keeps 2,500 stallions, the rest must be kept by private owners, and in order to encourage these rewards are given by the State to the extent of about 2,500,000 fr. a-year. Stallions that have won prizes are called "étalons approuvés." The prizes are from 500 fr. to 3,000 fr. for thorough-breds, 400 fr. to 1,600 fr. for half-breeds, and 300 fr. to 800 fr. for cart-horses. Prizes are also given for mares and foals. No stallions are approved unless they are 4 years old and free from blemish. The pedigrees of thorough-breds are registered in the Stud Book. No approved stallions are allowed to be used for breeding outside the department in which the approval is given. The number of mares covered in any season is not to exceed thirty in the case of Arabs or Anglo-Arabs, forty in the case of half-breeds, and fifty in that of draught-horses. No premium is paid when the stallion has not covered half the number of mares above enumerated. The age of every animal is counted from the 1st January of the year of its birth.

Austria-Hungary.

The breeding establishments of Austria-Hungary are divided under the two categories of—(*a.*) Studs; (*b.*) Depôts of stallions. The former are intended for the breed of special classes of horses; the latter are maintained for improving the quality of horses in the country generally. Both the "studs" and "depôts" are placed under the Ministries of Agriculture of the respective halves of the Empire; their administration is civil; their direction is military. As, however, there is no central or Imperial management for these breeding establishments, they must be considered separately, though the principles of their executive are almost identical. They were founded by a common Government between the years 1785 and 1792;* but now the Hungarian hand would disdain to know what the Austrian hand is doing, and there are separate Budgets, Codes of Regulations, and a distinct course of procedure for them. We will first examine the Austrian, and then the Hungarian establishments. In Austria there is but one Government stud, and that is at Radautz, in Galicia. Radautz is an estate of 2,403 acres on the banks of the Suczawa, backed by the vast forests of the eastern slopes of the Carpathians. It is leased from the representatives of the Orthodox Church for an annual rent of 60,000 fl. The stud comprises a central stable at Radautz, and fifteen dependencies and paddocks for brood mares and young horses. These dependencies are under the command of officers who report daily to Radautz, and are frequently inspected by the Lieutenant-Colonel, Director of the central depôt there. To all studs, whether in Austria or in Hungary, there is attached (and subordinate) a large and important farm. At Radautz, for instance, in addition to horses, there are two branches (at Tocnitura and Oberwikow) where oxen are reared for agricultaral purposes. The rules for

* Except Fogaras, which was established in 1874.

managing the horses at the studs are simple. The horses are given as much as possible to the open air. They are exercised at least three hours a day under the charge of a mounted "csikos," or drover, who is escorted by dogs. From the end of May to September the horses (brood mares excepted) are sent to the hills or wild ground, and left to their own devices. At night they are always under shelter. The young horses are assembled in their third year at Radautz to be broken in; in the September of their fourth year they are distributed to the various depôts (if stallions), and if mares, kept for breeding. There is an annual sale of horses who break down or turn out useless. About fifty to sixty young stallions are thus sent yearly to the depôts. Regarding the cost of Radautz:—The total amount demanded in last year's Budget for this stud was 319,955 fl.* Against this is the amount deduced by the annual sales or the management of the farm, estimated for 1884 at 195,900 fl. Of this vote the principal items are:—

	Florins.
Salaries and wages . . .	95,806
Agricultural expenses . .	72,000
Repairs to buildings . .	20,000
Cost of oats . . .	22,000
Rent.	60,000

There are five stallion depôts in Austria and three nurseries for foals. The names of these depôts and the number of horses at each are as follow:—Stadl (Lower Austria), 283, with a nursery; Gratz (Styria), 401; Prague (Bohemia), 496, nursery at Neuhof; Klosterbruck (Silesia), 331, nursery at Troppau; Drohowyce (Galicia), 426. The net cost of these depôts is 850,580 fl. The stallions of these depôts are dispersed from the 1st March to the 1st July, in numbers varying up to ten, between 480 stations, where they stand and cover at a price of 1 fl. to 5 fl. the mare. Five per cent. of the covering money goes to the non-commissioned officer in charge of the stallions. The food and billeting of both men and horses belonging to these outstations are arranged by contract. In Hungary the administration of the studs is vested in a civilian Director (member of the Ministry of Agriculture), his secretary, and twenty-two clerks. This staff can call to its consultation a standing Committee at Pesth, of ten members, formed to consider matters connected with horse breeding, and Deputies from similar Associations established in each district of the country. Besides defraying the expenses of the studs and depôts (a sum of 1,400,000 fl.) the Government can dispose of a fund of 300,000 fl. for the purchase of horses or encouragement of racing. It also protects a monopoly for the whole sale of Hungarian horses, which acts at Pesth. There are four Government studs in Hungary:—Babolna, with 448 horses destined to breed Arabs. Kisber (10 miles distant from Babolna), with eight stallions and thirty-one mares for the breed of English thoroughbreds. This is the most important and the most expensive establishment in the kingdom. Mezohegyrs, the largest stud, with a total of 1,500 horses, near Arad. A mixture of four breeds of horses, Arab, English half-bred, Normandy, and Norfolk. Forgaras, in Transylvania, formed in 1874; 276 horses, for the improvement of the mountain breeds of Hungary, There are four stallion depôts in Hungary (each with numerous sub-stations). Szekesfehervar, 530 horses; Debreczen, 330 horses; Nagy-Körös, 550 horses; Szepsi-Szent György, 210 horses. The horses belonging to these depôts are distributed in parties varying from two to eight between 550 stations; the price of covering being from 2 fl. to 10 fl. A stallion as an average covers thirty mares. Since the introduction of a general conscription and a short service, no small difficulty has been found in finding officers and men to carry out the difficult and careful duties required by the breeding establishments in Austria-Hungary. As an average, one man is allowed to two stallions or young horses in training, or to eight mares (at Kisber one man to four mares). In the depôts the average is three men to five horses. Particular pains have been taken in Hungary to remedy this failure. Since 1880 there has been formed at Pesth an annual course for training officers to service with the studs. On passing an examination, the candidates are appointed for twelve months to a stud, and if approved at the end of that time, promoted at once to the rank of Lieutenant. For subordinate places the practice has been largely introduced of training boys (the sons generally of men already employed), and this seems to have produced very good results. The amounts quoted above as granted by the respective Governments of Austria (a little over 80,000*l.*) and Hungary (116,500*l.*) is not all that is granted towards the encouragement of horse breeding. A large amount (16,000*l.* in Austria alone) is spent on the purchase of promising looking young horses from private breeders for incorporation in the Government establishments; prizes are given for races, separate breeders, as well as to exhibitors, &c.; private stallions are hired or purchased, &c. (items which come to a vote of 5,000*l.* more), and indeed the total asked for the purpose of improving the breed of horses in Austria alone is little short of 140,000*l.* In Croatia there are 120 horses for breeding purposes supported by the Hungarian Government. The common Imperial Ministry of War also supports two depôts of young horses at Piber and Billak,

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	£
The central establishments cost, for maintenance, about	50,000
And the fifteen depôts cost .	46,920
Total . . .	96,920

These expenses include salaries, forage, building expenses, &c. The receipts are comparatively insignificant, and appear in the Budget merely for the purpose of showing that the books of the various establishments are properly kept, that land adjoining the paddocks is properly and economically cultivated, &c.

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The greater part of the receipts consists in the small charge which is levied for the use of the stallions, and which amounts to about . .	60,000
The other receipts, which include the sale of old or useless horses, stakes won by the Graditz race-horses (1,800*l.*), &c., amount to .	2,500
Total of receipts . .	62,500
Total of expenses . .	96,920
Deficit	34,420

So that, inclusive of the 45,000*l.* granted for buying purposes, the breeding establishments may be roughly estimated as costing 80,000*l.* for the present financial year. In the central breeding establishments, the Tables for 1882 show that there were 29 sires and 583 brood mares, who produced in that year—

	Foals.
227 colts and 202 fillies, in all .	429
Of these were slipped . . .	31
Leaving as net produce .	398

In the same year 138 were sent out as stallions, 29 were sent to the King's stables, making 167 sent away from the establishments; while 57 mares were taken into use as brood mares, and 173 horses (46 old and 127 young) were sold. In the provincial depôts the number of stallions in 1882 is put down at 2,017, and the average number of "stations" in each province which are supplied with stallions by the provincial "depôts;" so that, taking the average number of stallions in each province, it can be roughly estimated that each depôt supplies stallions to about fifty "stations," and each station has about five stallions. The total number of mares covered by these stallions in 1882 is put down at 103,897.

Of these mares, the number in foal was	66,250
And the number of foals slipped	6,123
Of all foals, deaths, &c., amounted to nearly . .	4,000
Total of foals born, exclusive of deaths, &c. . . .	56,373

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The Annual Return of the Registrar-General shows that the total extent under crops (including meadow and clover) in 1887 is 5,064,650 acres, being a *net increase* on the extent in 1886 of 30,535 acres, or 0·6 per cent.

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CHRONICLE OF EVENTS AND OCCURRENCES.

Home and Foreign.

From November, 1886, *to October*, 1887.

1886.

Oct. 28. Dedication of the Bartholdi Statue at New York, presented by the French to the American nation.

—. Despatch of Russian ships of war to Varna.

31. Meeting of the Bulgarian Sobranje, in order to elect a new Prince.

—. Gravel-Pit-Wood, Highgate, formally dedicated by the Lord Mayor to the use and recreation of the public.

Nov. 4. Attempted seizure of Bourgas by Russia.

7. Departure of General Sir Frederick Roberts from Calcutta to Rangoon, in order to assume the command in Burma.

9. Proposed meeting of Socialists in Trafalgar Square, after the Lord Mayor's procession, forbidden by proclamation of the Chief Commissioner of Police.

10. Closing of the Indian and Colonial Exhibition, which had been visited since its opening in May by 5,550,749 people, or an average of 33,846 a-day.

—. Prince Waldemar elected Prince of Bulgaria.

11. The Liverpool Cup won by "Melton."

13. The King of Denmark refused to allow Prince Waldemar to accept the throne of Bulgaria.

16. A decree of nullity of marriage granted for the petitioner in the case of Sebright (or Scott) v. Sebright.

17. Arrival of General Sir Frederick Roberts at Mandalay in order to assume command of the British troops in Burma.

19. Fire in the private rooms of Hampton Court Palace.

20. Departure of General Kaulbars and the Russian Consuls from Bulgaria.

21. Meeting of Socialists in Trafalgar Square.

23. Capture of a Burmese stronghold at Puzan Myang.

24. Verdict for the defendants with costs in the libel case of "Adams v. Coleridge and another."

26. Sale of Staple-Inn, Holborn, for 68,000*l.*

27. Robbery of the American mails for Russia from the mail van of the train from Ostend to Brussels.

—. Unveiling of a statue to Richard Cobden at Stockport, which he represented in the House of Commons from 1841 to 1847.

Dec. 1. Opening of the Severn Tunnel for passenger traffic.

2. Destruction by fire of several large warehouses and the church of St. Mary Magdalene in Knightrider Street.

3. Resignation of the French Ministry.

7. Conference of Liberal Unionists at Willis's Rooms, the Marquis of Hartington in the chair.

8. Great gale throughout the country, accompanied by an extraordinary fall of the barometer—27·450 at the Orme's Head: the Southport and St. Anne's lifeboats lost with all hands but three while endeavouring to rescue the crew of a barque.

—. Meeting at the Mansion House in order to inaugurate the building of a Church House as the Church of England Memorial of the Queen's Jubilee.

Dec. 11. Mr. McArthur, Member for Buckrose, unseated on petition, and Mr. Christopher Sykes declared duly elected.
13. The foundation stone laid of a new central fish-market in Farringdon Street.
14. The Crown of Bulgaria offered, informally, to Prince Ferdinand of Saxe-Coburg.
—. Mr. Dillon adjudged, in the Court of Queen's Bench in Ireland, to enter into securities to the amount of 3,000*l.* to be of good behaviour, or in default to be committed to prison for six months.
15. The new buildings of Sion College, on the Victoria Embankment, Blackfriars, opened by H.R.H. the Prince of Wales.
16. Arrest of Messrs. Dillon, O'Brien, Harris, and Sheehy at Loughrea for conspiring to induce tenants not to pay rents which they were lawfully bound to pay.
—. Bank rate raised from 4 per cent., to which it had been raised on October 21st, to 5 per cent.
19. Boh Shway's headquarters in Burma stormed and captured by Brigadier-General Low.
20. Meeting at the Mansion House, under the presidency of the Lord Mayor, in order to further the endeavours to raise 100,000*l.* for Guy's Hospital.
22. Lord Randolph Churchill resigned the office of Chancellor of the Exchequer.
23. A French merchant vessel run down in the Tagus by H.M.S. *Sultan*, and 30 lives lost.
26. Heavy snowstorm throughout the country, causing great destruction to trees.
29. Reception by the Earl of Iddesleigh, at the Foreign Office, of the Bulgarian Delegates commissioned by the Great Sobranje of Bulgaria to lay the case of their country before the Governments of the leading European Powers.
31. Parliament formally prorogued from the 13th to the 27th of January, owing to the political crisis.

1887.
Jan. 1. Issue of a new set of postage and revenue stamps by the Post Office, and extension of the Parcel Post to Tasmania and Australia.
—. Great fire in Wood Street, Cheapside.
2. Disastrous explosion at the Portsmouth Barracks, causing four deaths.
3. Mr. Goschen accepted the Chancellorship of the Exchequer in Lord Salisbury's Cabinet.
4. Railway accident on the Baltimore and Ohio Railway, U.S.A., resulting in the death of 20 people, and injury to many others.
5. Lords Lansdowne and Northbrook refused to enter Lord Salisbury's Cabinet, and the Earl of Iddesleigh resigned.
9. The Alcazar of Toledo burnt to the ground.
11. Meeting in St. James's Hall in order to promote the formation of a Liberal and Radical Union for London.
12. Great meeting at St. James's Palace, under the presidency of H.R.H. the Prince of Wales, to promote the formation of the Imperial Institute.
13. Conference of Liberal Leaders with a view to reuniting the Liberal Unionists and the Gladstonians.
—. The freedom of the City of London conferred on Mr. Henry Morton Stanley in consideration of his distinguished services as a traveller and explorer in Africa.

Jan. 14. The German Army Bill rejected in the Reichstag, and the Reichstag dissolved.
18. Panic at the Hebrew Dramatic Club, Spitalfields, owing to a false alarm of fire, in which 17 persons were trodden to death.
21. Departure of Mr. H. M. Stanley for Zanzibar in order to conduct the Expedition for the relief of Emin Pasha in the Soudan.
22. Liberal Unionist Demonstration at Hawick.
23. Evacuation of Port Hamilton by the British.
24. Panic on the Vienna Bourse owing to the war scare.
26. Mr. Ralph Neville, Gladstonian, elected for the Exchange division of Liverpool, by a majority of 11 votes over Mr. Goschen.
27. Opening of the Second Session of the 12th Parliament of the Queen's reign.
—. Strike of 20,000 'longshoremen and coalers at the New York wharves.
29. Meeting in Lincoln's-Inn Hall for the purpose of founding a society, to be called the "Selden Society," to encourage the study and history of the common law of England.
31. Foundering of the British emigrant ship *Kapunda* south of Maceio, and loss of 298 lives.

Feb. 9. The bank rate lowered from 5 per cent., to which it was raised on December 16, to 4 per cent.
—. Close of the sale of the late Fred. Archer's effects, realising nearly 4,000*l.*
4. Celebration of the centenary of the consecration of the first American Bishops.
—. Mr. Cremer's amendment to the Address calling for the Evacuation of Egypt defeated by 263 to 97.
5. Accident to the Boston and Montreal mail train in America, causing over 50 deaths, many people being burnt to death.
7. The aquatic championship of England rowed for on the Tyne between G. Bubear and G. J. Perkins, and won by the former by two lengths.
8. Resignation of the Italian Ministry.
9. The Earl of Dunraven resigned the post of Under-Secretary for the Colonies.
10. Outbreak of cholera at Essegg in Slavonia.
11. Mr. Parnell's amendment to the Address rejected by a majority of 352 against 246.
12. Consecration, in the presence of H.R.H. the Prince of Wales, of the English Church at Cannes, dedicated to the late Duke of Albany.
14. Great fire at Draper's Wharf, Battersea.
—. Opening of the trial of Messrs. Dillon, M.P., O'Brien, M.P., and others for conspiracy in carrying out the "Plan of Campaign" in Ireland.
16. Celebration in India of the Queen's Jubilee.
—. Dr. Cameron's amendment to the Address, praying for a full inquiry into the administration of justice in the Highlands, negatived by 253 to 136.
17. The debate on the Address brought to a close.
18. Disastrous explosion at the Cwtch Colliery, Rhondda Valley.
23. Disastrous earthquake round Nice and Monte Carlo and the South of France.
—. Great loss of life in the Genoese Riviera district, and destruction of Bajardo and Diano Marina.
24. The trial of Messrs. Dillon and O'Brien for conspiracy ended by a disagreement of the jury.

Feb. 26. Opening of a new thoroughfare between Charing Cross and Tottenham Court Road by H.R.H. the Duke of Cambridge.
28. The German elections decided in favour of the Government.
Mar. 1. Mutiny of the garrison of Silistria against the Bulgarian regency.
—. Extension of the Parcel Post to British Honduras.
3. Revolt of the Silistria garrison in Bulgaria quelled.
4, Close of the sale of Baron Seillière's library, which realised 28,000*l.*
5. Sir Michael Hicks Beach, Bart., resigned the Chief Secretaryship for Ireland; Mr. A. J. Balfour appointed his successor.
8. Mr. W. H. Smith's amendment to the Procedure Rules, giving the Chair a veto, carried by 160 votes to 70.
10. Fatal explosion of *melinite* at the fortress of Belfort, killing six and wounding eleven soldiers.
—. The bank rate reduced from 4 per cent., to which it was lowered on February 3, to 3½ per cent.
13. Attempt to assassinate the Czar of Russia.
14. Railway accident on the Boston and Providence Railway, U.S.A., in which 30 people were killed and over 40 injured.
15. Great snowstorm in London.
—. The Church Patronage Bill passed through Committee in the House of Lords.
18. The Closure Rule adopted in the House of Commons by 262 votes to 41.
—. Reported renewal of the alliance between Germany, Austria, and Italy.
19. Father Keller committed to Kilmainham Gaol for refusing to answer any questions upon matters within his knowledge in relation to the bankruptcy of Patrick O'Brien, a tenant on the estate of Mr. Ponsonby, near Youghal.
21. The Irish Criminal Procedure Bill announced in the House of Commons.
22. Celebration at Berlin of the Emperor of Germany's 90th birthday.
—. Mr. W. H. Smith moved in the House of Commons that the introduction and several stages of the Criminal Law Amendment Bill have precedence over all other business when it is set down.
23. Her Majesty laid the foundation stone of the New Law Courts in Birmingham.
—. The Lincolnshire handicap won by Mr. Manton's "Oberon."
24. The bank rate reduced from 3½ per cent., to which it was lowered on the 10th inst., to 3 per cent.
25. The Liverpool Grand National won by Mr. Jay's "Gamecock."
—. Mr. Morley's amendment to the Government motion demanding precedence for the Criminal Procedure Amendment Bill rejected by 349 votes to 260.
28. The Criminal Law Amendment (Ireland) Bill introduced into the House of Commons by the Chief Secretary for Ireland.
30. The Land Bill for Ireland introduced into the House of Lords.
April 1. The Crimes Bill (Ireland) read a first time in the House of Commons; the closure being applied by a majority of 108 to bring the obstructive debate to an end.
4. Opening meeting of the Colonial Conference under the presidency of Sir Henry Holland.
5. Mr. Joseph Arch's petition against the return of Lord Henry Bentinck as Member for North West Norfolk, dismissed with costs.

April 5. Renunciation of the Crown of Saxe-Coburg by H.R.H. the Duke of Edinburgh in favour of his son.
6. Destructive fire at the East Infantry Barracks, Aldershot.
7. The road from Cabul to Candahar reported to be blocked by a rising of Ghilzais.
11. Meeting of Socialists and Irishmen in Hyde Park to protest against the passing of the Crimes Bill.
13. Wreck of the Brighton and South Coast Railway Company's steamer *Victoria* off Dieppe, with a loss of 20 lives.
—. The importation of foreign bronze coins into this country prohibited by Proclamation.
14. The bank rate lowered from 3 per cent., to which it had been reduced on March 24th, to 2½ per cent.
15. Suspension of Mr. Healy in the House of Commons during the debate on the Crimes Bill (Ireland).
16. Opening of the Astronomical Congress at Paris.
18. Facsimile of a letter said to be written by Mr. Parnell approving of the murder of Mr. Bourke in the Phœnix Park published in the *Times*.
—. The second reading of the Crimes Bill (Ireland) carried in the House of Commons by a majority of 101 (370 to 269).
19. Defeat of the Ameer of Afghanistan's troops by rebels.
20. The Police Enfranchisement Bill read a second time in the House of Commons.
—. The City and Suburban won by "Merry Duchess."
21. Arrest by the German police of M. Schnaebelé, a French Commissary of Police, at Pagny-sur-Moselle, without any apparent reason.
—. Earthquake shocks in Guernsey and Jersey.
22. Loss of a pearl-fishing fleet and over 500 lives off the coast of Western Australia in a hurricane.
25. The Land Transfer Bill (Ireland) read a second time in the House of Lords.
27. The Two Thousand Guineas won by Mr. Baird's "Enterprise."
28. Mr. Reid's amendment to the Crimes Bill negatived by 341 to 240.
—. The Tithe Rent Change Bill read a second time without a division in the House of Lords.
—. The bank rate reduced from 2½ per cent., to which it was lowered on the 14th, to 2 per cent.
29. Release of M. Schnaebelé by the Germans.
—. The "One Thousand Guineas" won by the Duke of Beaufort's "Rêve-d'or."

May 3. The Manchester Exhibition opened by H.R.H. the Prince of Wales.
4. The Khyber Pass reported to be blocked by the rebels in Afghanistan.
—. The Chester Cup won by Mr. Somers's "Carlton."
—. Terrible explosion of fire-damp in a coal mine at Nanaimo, Vancouver Island; 165 miners entombed and killed.
5. The House of Commons resolved, by a majority of 297 to 218, to decline to treat the article on "Parnellism and Crime," published in the "Times" as a breach of privilege.
—. Mr. Gladstone's motion for a Select Committee to inquire into charges brought by the "Times" against Mr. Parnell defeated by 317 to 233.
7. The Jubilee Stakes Handicap at Kempton Park won by Mr. Barclay's "Bendigo."
9. Close of the Colonial Conference.

May 12. Unveiling of the Duomo Façade at Florence.
13. Consols sold at the highest price ever recorded, viz., 103¼.
14. The Queen's Hall of the People's Palace in the East of London formally opened by Her Majesty.
16. The Police Force Enfranchisement Bill read a second time in the House of Lords.
17. Resignation of M. Goblet's Ministry.
18. The first clause of the Crimes Bill carried through Committee in the House of Commons.
22. Jubilee Service attended by the House of Commons at St. Margaret's, Westminster, in celebration of the 50th Anniversary of Her Majesty's reign.
23. Conclusion of the sale of the French crown jewels at Paris, realising 6,684,000 francs.
25. The Derby won by Mr. Abington's "Merry Hampton."
—. The Opera Comique Theatre, Paris, burnt down during a performance of "Mignon;" 100 lives lost.
27. The Oaks won by the Duke of Beaufort's "Rêve d'Or."
—. Destructive fire at the Belt Line Tramway depôt, New York; 1,300 horses and several hundred cars burnt.
28. Disastrous colliery explosion at Udston, near Glasgow.
31. Great fire at Hamburg at the Strand and Hübener Quays, destroying six sheds and two English vessels.

June 1. Bursting of the banks of the River Theiss, in Hungary, causing the inundation of a large tract of country round Szegedin.
2. The Manchester Cup won by Mr. Somers's "Carlton."
3. Inauguration of the opening of the North Sea and Baltic Canal by the Emperor of Germany.
6. Reassembling of Parliament after the Whitsuntide recess.
—. The Albert Medal of the Society of Arts for the year 1887 awarded to and accepted by Her Majesty.
8. The Royal Hunt Cup at Ascot won by "Gay Hermit."
—. Further fighting reported in Afghanistan.
—. Fatal colliery explosion in Prussia, causing loss of life to over 50 miners.
9. The "change of venue" in the Crimes Bill (Ireland) abandoned by the Government.
—. The Ascot Gold Cup won by "Bird of Freedom."
10. Mr. W. H. Smith's motion that the Committee on the Criminal Law Amendment Bill (Ireland) be brought to a close on the 17th carried by a majority of 152.
13. Great Meeting of Freemasons under the presidency of H.R.H. the Prince of Wales, at the Albert Hall to present an address to Her Majesty on the completion of 50 years on the Throne.
14. The Royal Thames Jubilee Yacht Race round the United Kingdom started by H.R.H. the Prince of Wales at Southend.
15. The falls of Niagara safely shot in a barrel by Mr. Carlisle Graham.
17. The Committee Stage of the Crimes Bill ended in the House of Commons.
18. Hammersmith Bridge declared open to the public by H.R.H. Prince Albert Victor.
21. Celebration throughout the country of the 50th year of Her Majesty's reign.
23. Reported delay in the signature of the Egyptian Convention owing to the opposition of France and Russia.
24. Departure of the Pope's Mission to Ireland to report on the state of affairs in that country.
25. The foundation stone of the Library of the People's Palace laid by His Majesty the King of the Belgians.

June 27. The *Genesta* arrived at Dover, the winner of the Jubilee Yacht Race round the British Isles.
—. Visit of H.R.H. Prince Albert Victor and Prince George of Wales to Ireland.
29. The Northumberland Plate won by "Exmoor."
30. Mr. W. H. Smith's motion fixing a time for the conclusion of the discussion on the Report Stage of the Crimes Act (Ireland) carried in the House of Commons by a majority of 100.

July 2. A Parade of the Volunteers before the Queen at Buckingham Palace.
4. The foundation-stone of the Imperial Institute laid at South Kensington by Her Majesty.
—. The Irish Land Law Bill read a third time in the House of Lords.
—. Mr. W. H. Smith's motion that Government orders of the day and notices of motion have precedence of all other business for the remainder of the Session, carried by 165 to 85.
5. The Government defeated by 5 votes on a motion for the adjournment of the House.
6. The Oxford and Cambridge cricket match won by Oxford by 7 wickets.
7. Prince Ferdinand of Coburg elected Prince of Bulgaria by the Sobranje.
8. Third reading of the Irish Crimes Bill carried by a majority of 87.
9. Review at Aldershot by Her Majesty of nearly 60,000 troops.
13. The amateur championship of the Thames won by Mr. G. Nickalls, of Magdalen College, Oxford.
—. Visit of Her Majesty to Hatfield House.
14. The Irish Land Bill read a second time in the House of Commons.
15. St. Bride's Church, Fleet Street, London, struck by lightning.
—. Railway accident near St. Thomas, Ontario, 17 people burnt to death, and many fatally injured.
—. Departure of Sir Henry Drummond Wolff from Constantinople, on the refusal of the Sultan to ratify the Egyptian Convention.
19. The Queen's Prize at Wimbledon won by Lieutenant Warren of the Victoria Rifles (Middlesex), with a total of 274.
20. Settlement of the Afghan Frontier question effected.
—. The Leicester Jubilee Cup won by "Kinsky."
23. Great Naval Review before the Queen at Spithead.
24. The Criminal Law Amendment Act put in force in 31 counties in Ireland.
28. Mr. Healy suspended in the House of Commons.
29. Mons. Ferry challenged to a duel by General Boulanger.

Aug. 3. The Irish Land Bill passed through Committee in the House of Commons.
4. The bank rate raised from 2 per cent., to which it had been lowered on April 28th, to 3 per cent.
—. Strike of engine-drivers and stokers on the Midland Railway.
6. The Irish Land Bill read a third time in the House of Commons.
—. Great fire at Whiteley's warehouses in the Queen's Road, Bayswater.
10. The Inman line steamer *City of Montreal* destroyed by fire 400 miles off the coast of Newfoundland; all lives saved.
11. Terrible railway accident near Piper City, Illinois, U.S.A. 500 people killed and injured.

Aug. 11. Outbreak of cholera on the North-west Frontier of India.
12. Arrival of Prince Ferdinand of Bulgaria at Tirnova.
16. Formal protest by Russia against the election of Prince Ferdinand to the Bulgarian throne.
17. Great thunderstorm throughout the country; two churches in London struck by lightning, and the Metropolitan Railway flooded.
19. The National League in Ireland proclaimed under the Crimes Act.
23. Great mass meeting in Dublin to protest against the proclamation of the National League.
25. Escape of Ayoub Khan from Persia.
26. Mr. Gladstone's motion in the House of Commons challenging the proclamation of the National League defeated by 272 to 194 votes.

Sept. 1. The bank rate raised from 3 per cent., at which it had been fixed on August 4th, to 4 per cent.
5. The Theatre at Exeter burnt down during a performance; over 130 lives lost.
6. Suspension of Messrs. Greenway's Bank at Warwick.
10. Riots at Mitchelstown during the hearing of the charge against Mr. Wm. O'Brien, M.P., for inciting resistance against the eviction of tenants; two men shot.
11. Arrest of Mr. Wm. O'Brien, M.P., at Dublin.
12. Strike of over 20,000 men in the nail trade in Staffordshire and Worcestershire.
13. Suspension of Mr. C. Graham and Mr. E. Harrington by the House of Commons.
14. Manifesto from the Comte de Paris to the Monarchical Party in Paris.
—. The St. Leger won by "Kilwarlin."
15. Celebration at Philadelphia of the Centenary of the Signature of the Constitution of the United States.
16. Prorogation of Parliament after the longest session recorded.
—. Railway accident near Doncaster; 23 people killed and over 60 injured.
19. Explosions on the Royal Mail Company's ship "Elbe" during a trial of her engines; 9 men killed.
— Riot at Lillie Bridge Athletic Grounds; the Pavilion and other fixtures pillaged and burnt.
24. Mr. Wm. O'Brien, M.P., sentenced to 3 months' imprisonment.
27. Announcement of the gift of 400,000*l.* by the Nizam of Hyderabad for the defences of India.
— Loss of a Chinese transport and 300 lives off the Pescadores Islands.

Oct. 2. Meeting between Prince Bismarck and Count Crispi at Friedrichsruh.
3. Opening meeting of the Church Congress at Wolverhampton.
5. The Burmese dacoit leader, Boh Shway, killed by a party of mounted infantry under Major Harvey.
6. Attendance of Mr. T. D. Sullivan, M.P., Lord Mayor of Dublin, at the Police Court in Dublin to answer a charge under the Crimes Act.
10. The elections to the Bulgarian Sobranje resulted in a decisive victory for the ministry of M. Stambouloff.
11. The Cesarewitch won by "Humewood."
12. The Middle Park Plate won by "Friar's Balsam."
18. Rioting of Socialists in Hyde Park.
23. Agreement between England and France on the questions of the neutralization of the Suez Canal and the evacuation of the New Hebrides announced.

Oct. 24. Disastrous colliery explosion at Walker, near Newcastle-on-Tyne.
25. The Cambridgeshire won by "Gloriation."
27. Mr. Wilfrid Blunt sentenced to two months' imprisonment for attending a meeting in Ireland proclaimed under the Criminal Law Amendment (Ireland) Act, 1887.
29. Appointment of the Earl of Lytton, G.C.B., as Her Majesty's Ambassador at Paris, on the retirement of Lord Lyons.
31. The sentence on Mr. O'Brien, M.P., of three months' imprisonment confirmed on appeal.

OBITUARY

OF DISTINGUISHED AND NOTABLE PERSONS WHO DIED BETWEEN OCTOBER, 1886, AND OCTOBER, 1887.

1886.		Age
Oct.	27. MONKSWELL, the Right Hon. Robert Porrett Collier, Lord, one of the paid Judges of the Judicial Committee of the Privy Council	69
	29. STRAFFORD, the Right Hon. George Stevens Byng, Earl of	81
Nov.	3. SMITH, Alderman David, M.P. for Brighton	60
	—. CLOWES, George, printer and publisher	72
	6. BARRINGTON, George William Barrington, Viscount, Captain of the Hon. Corps of Gentlemen-at-Arms	62
	7. BOILEAU, Major-General John Theophilus, F.R.S., for many years chairman of the Soldiers' Daughters' Home, at Hampstead	81
	8. ARCHER, Frederick, the jockey, winner of 2,746 races, shot himself while in a delirium from fever	29
	—. PRIOR, Thomas Abiel, line engraver	77
	10. FARRE, Frederick John, M.D.	83
	11. BERT, Paul, French Governor of Tonquin	53
	12. ENNISKILLEN, Willoughby Cole, Earl of, and Baron Grinstead in the peerage of the United Kingdom	79
	—. LENTAIGNE, Sir John Francis O'Neill, C.B., Inspector of Reformatory and Industrial Schools in Ireland	83
	—. VULLIAMY, George, Superintending Architect to the Metropolitan Board of Works	70
	13. DOO, George Thomas, R.A., F.R.S., engraver	87
	15. GELDERN, Baron Gustave Heine, editor and proprietor of the Vienna *Fremdenblatt*	78
	18. ARTHUR, General Chester Alan, Ex-President of the United States	56
	20. HUMPHREYS, Sir John, Senior Coroner for E. Middlesex	73
	21. ADAMS, Charles Francis, United States Minister to Great Britain from 1861 to 1868	80
	23. KOMPERT, Leopold, Austrian novelist	64
	27. COOPE, Octavius Edward, Conservative Member for the Brentford division of Middlesex	72
	30. AYRTON, Right Hon. Acton Smee, First Commissioner of Public Works in Mr. Gladstone's Ministry from 1868 to 1873	70
Dec.	4. GROTE, Arthur, F.R.S.	72
	5. BALGUY, John, one of the Metropolitan Police Magistrates	64
	6. DACRES, Field Marshal Sir Richard James, G.C.B., Constable of the Tower	87
	10. MINGHETTI, Marco, twice President of the Italian Ministry	68
	12. MADRIG, Jean Nicholas, Danish philologist and politician	82
	13. PATTERSON, Robert Hogarth, author	65
	17. FORSYTH, Sir Douglas, C.B., K.C.S.I.	59
	19. LYONS, Robert Dyer, M.D., formerly Liberal Member of Parliament for Dublin, and author of various medical works	60
	26. ELPHINSTONE, Sir James Dalrymple Horn, Bart., formerly Member of Parliament for Portsmouth	82
	27. OPPOLZER, Theodore, astronomer	46

			Age
Dec.	30.	DUNCAN, David, Member of Parliament for the Exchange division of Liverpool.	45
1887.			
Jan.	1.	KELLY, Bernard, Member of Parliament for S. Donegal .	
	3.	POTTER, Rev. Horatio, D.D., Protestant Episcopal Bishop of New York	84
	5.	BOLTON, Colonel Sir Francis John, inventor of the system of telegraphic and visual signalling introduced into the Army in 1863	56
	—.	PHILLIPS, John Arthur, chemical geologist . . .	64
	6.	TUCKER, Stephen, Somerset Herald	52
	9.	BALLANTINE, Serjeant William	72
	12.	IDDESLEIGH, Right Hon. Stafford Henry Northcote, Earl of, G.C.B., suddenly, while taking formal leave of the Marquis of Salisbury, on resigning the post of Secretary of State for Foreign Affairs	69
	14.	AMERLING, Frederick, Austrian artist	86
	18.	RIGG, Right Rev. George, first Roman Catholic Bishop of Dunkeld	72
	20.	GARDNER, Captain William, inventor of the Gardner gun .	42
	21.	CHESTERFIELD, Henry Edwin Chandos Scudamore Stanhope, Earl of	66
	22.	WHITWORTH, Sir Joseph, Bart., C.E., F.R.S. . . .	84
	27.	STENZEN, Professor, Director of the German Archæological Institute, at Rome	71
	29.	GAILLARD, Claude Ferdinand, French artist . . .	53
Feb.	1.	CHAMPAIN, Colonel Sir John Bateman, K.C.M.G., Director-in-Chief of the Indo-European Government Telegraph Department	52
	5.	MACGREGOR, General Sir Charles Metcalfe, K.C.B. . .	47
	6.	CONCHES, the Baron Feuillet de, "Father" of the French Foreign Office	88
	7.	DEAS, The Hon. Lord George, formerly one of the Senators of the College of Justice, Edinburgh	83
	—.	SCHRÖDER, Professor Carl, well-known German "gynecologist"	39
	8.	RYLANDS, Peter, M.P. for Burnley	67
	9.	LEINSTER, Charles William Fitzgerald, Duke of . .	68
	10.	WOOD, Mrs. Henry, authoress of "East Lynne," &c. . .	67
	—.	DUVAL, Raoul, well-known French politician . . .	54
	11.	LAURENT, Francis, author and Professor of Civil Law in the University of Ghent	77
	15.	MARSTON, Philip Bourke, poet and *littérateur* . . .	35
	17.	STRAHAN, Major-General Sir George C., R.A., K.C.M.G., Governor-elect of Hong-kong	49
	21.	DEMOLOMBE, M., eminent French jurist	82
	—.	DOYLE, Percy William, C.B., Minister Plenipotentiary at Mexico from 1851 to 1858	81
	22.	CAULFIELD, Richard, LL.D., antiquarian and archæologist .	64
	23.	SEYMOUR, Admiral Sir Michael, G.C.B.	85
	—.	BECLARD, Jules, French physician and physiologist . .	69
	28.	JACOBINI, Ludovico, Cardinal	55
Mar.	1.	GOLDIE, George, church architect.	59
	4.	BECKX, Father, Superior-General of the Jesuits . . .	93
	7.	WATSON, Thomas, Member of Parliament for the Ilkeston division of Derbyshire	64
	8.	BEECHER, Rev. Henry Ward	74
	—.	FEVAL, Paul, French novelist	69

		Age
Mar.	8. EADS, Captain James B., originator of the Isthmus Ship-railway project	67
	11. ANDREW, Sir William, C.I.E., author of "India and her Neighbours," and of other works	81
	15. GERARD, Robert Tolver, Baron	79
	17. BRANDON, Woodthorpe, assistant judge of the Lord Mayor's Court	
	—. HARDY, Sir William, F.S.A., late Deputy-keeper of the Public Records	80
	19. FANGERE, Prosper, publisher of the first authentic edition of "Pascal's Pensées"	77
	20. CROSS, John Kynaston, late Under-Secretary of State for India	55
	23. LIGHTFOOT, Rev. John Prideaux, D.D., Rector of Exeter College, Oxford	84
	24. HARRISON, Ven. Benjamin, Canon of Canterbury, and Archdeacon of Maidstone	79
	—. STRANGFORD, Emily Anne Beaufort, Viscountess	
	—. COLLINS, Rev. W. Lucas, Hon. Canon of Peterborough and Editor of "Ancient Classics for English Readers"	70
	31. SAXE, John Godfrey, American poet	71
Apr.	2. TITCOMB, Right Rev. Jonathan Holt, D.D., Bishop of Rangoon from 1877 to 1882	63
	3. HINDLIP, Samuel Alsopp, Lord	76
	6. LANYON, Colonel Sir William Owen, C.B., K.C.M.G.	43
	7. GORE-BROWNE, Colonel Sir Thomas, C.B., K.C.M.G.	80
	10. ANDERSON, Sir Alexander, for many years Lord Provost of Aberdeen	84
	11. NEWDEGATE, the Right Hon. Charles Newdigate, M.P. for North Warwickshire for 43 years, till 1885	71
	—. NORFOLK, Flora Abney-Hastings, Duchess of	34
	18. LONGFORD, William Lygon Pakenham, G.C.B., Earl of	68
	19. GAMBLE, His Honour Judge, County Court Judge of Armagh and Louth, whilst addressing the General Synod in Dublin	63
	20. HERAUD, John Abraham	88
	26. KINNAIRD, Arthur Fitzgerald Kinnaird, Lord	73
	—. MELLOR, Right Hon. Sir John, Member of Judicial Committee of the Privy Council and formerly Judge of the Court of Queen's Bench	78
May	1. BINNEY, Right Rev. Herbert, D.D., Bishop of Nova Scotia	67
	3. FOX, Wilson, M.D.	
	5. GRANT, James, novelist	65
	7. COUSINS, Samuel, R.A.	86
	—. ADAMS, Thomas Julian, musical conductor and composer	63
	8. STEVENSON, Thomas, C.E., engineer	69
	9. SIGL, George; the first to establish a steam machine factory in Austria	76
	12. BOUSSINGAULT, Joseph Dieudonné, eminent French chemist	85
	14. KEITH-FALCONER, Hon. Ion Grant Neville, Lord Almoner's Reader in Arabic, Cambridge	31
	—. DE GEX, Sir John Peter, Q.C.	78
	15. DOUGLAS-HAMILTON, Frederic, late Her Majesty's Minister at Ecuador	72
	17. VULPIAN, Edme Felix Alfred, eminent French physiologist	61
	19. THYNNE, Lord John Boteville, from a fall from his horse	20
	—. MICHEL, Francisque, French author	78

			Age
May	21.	JONES, Sir Horace, City of London Architect	68
	22.	BLAKE, John Aloysius, M.P. for Carlow	61
	34.	PFIZMAIER, August, distinguished Orientalist	79
	26.	SAYE and SELE, the Ven. Frederic Twisleton-Wykeham Fiennes, Lord, Archdeacon of Hereford	88
	—.	MEATH, William Brabazon, Earl of	84
	27.	HILL, Right Rev. Rowley, D.D., Bishop of Sodor and Man	51
	30.	BAYNES, Thomas Spencer, LL.D. Professor of Logic at St. Andrew's University and Editor of the "Encyclopædia Britannica"	64
June	3.	WHEELER, William A., Vice-President of the United States during Mr. Hayes's Presidency	58
	—.	SECOND, Albéric, French *littérateur* and dramatic author	71
	4.	STOBBE, Johann Ernst Otto, eminent German Professor of Jurisprudence	55
	9.	WINCHILSEA and NOTTINGHAM, George James Finch Hatton, Earl of	72
	—.	HERRMANN, Herr, conjuror	72
	10.	LEQUESNE, Eugène Louis, French sculptor	72
	12.	STEVENS, William Bacon, D.D., LL.D., Bishop of the Episcopal Church for Pennsylvania	72
	16.	WALROND, Theodore, C.B., Civil Service Commissioner	63
	20.	KNIGHT, Finlay, one of the Registrars in Bankruptcy	64
	—.	ELLIS, Sir Barrow Helbert, K.C.S.I., Member of the Indian Council	67
	26.	COHEN, Lionel Louis, M.P. for North Paddington	55
	27.	DART, John Henry, Senior Conveyancing Counsel of the Chancery Division of the High Court of Justice	70
	28.	SHAW, John, Secretary to the South Eastern Railway Company	48
June	23.	ERSKINE, John Elphinstone, Admiral	81
July	1.	BOYD, Robert Watson, Ex-Champion Sculler of England	33
	3.	EWING, H. E. Crum-, Lord-Lieutenant of Dumbartonshire	85
	4.	WINCHESTER, John Paulet, Marquis of, Premier Marquis of England	86
	—.	FLOYER, Right Hon. John	76
	8.	OAKES, John Wright, A.R.A.	65
	9.	EDEN, Hon. Sir Ashley, K.C.S.I., late Lieutenant-Governor of Bengal	56
	13.	CARO, M., French philosophical writer	61
	—.	KRUPP, Alfred, proprietor of the celebrated Steel Works and Gun Foundry	77
	16.	HUTTON, Robert Howard, bone-setter	47
	21.	CONSITT, Right Rev. Monsignor Provost, Vicar Capitular	—
	22.	CARACCIOLO, Luigi, Italian composer	40
	25.	VERDIN, Robert, Member of Parliament for the Northwich Division of Cheshire	51
	29.	DEPRETIS, Agostino, formerly Prime Minister of Italy	74
	—.	CLERMONT, Thomas Fortescue, Lord	72
Aug.	1.	DELAMERE, Hugh Cholmondeley, Lord	75
	—.	KATKOFF, Michael Nicephorovitch, Editor of the "Moscow Gazette"	72
	9.	RAMSEY, Edward Fellowes, Lord de	69
	10.	LAWSON, The Right Hon. James Anthony, one of the Judges, Queen's Bench Division, Ireland	70
	11.	PRICE, Sir Richard Green, Bart., formerly M.P. for Radnorshire	84
	—.	DURUY, Albert, eminent French author	—

		Age
Aug.	14. JEFFERIES, Richard, author	39
	15. GOLDSCHMIDT, Meyer Aaron, Danish author	68
	19. SIMPSON, John Palgrave, dramatic author	81
	—. JONES, Rev. John, Welsh bard and author	84
	22. BAIRD, Spencer Fullerton, United States Fish Commissioner, and Secretary of the Smithsonian Institution	64
	23. PALLISER, John, C.M.G., geographical explorer	70
	24. GUYTON, Jane Emma Etherington (Worboise); novelist	63
	26. DONERAILE, Hayes St. Leger, Viscount, one of the representative Peers for Ireland, from the bite of a fox	69
Sept.	4. COMPTON, Earl	38
	6. LOVAT, Simon Fraser, Lord	60
	8. DOUGLAS, General Sir John, G.C.B.	70
	10. NELSON, William, publisher	71
	11. YOUNG, Sir Charles Lawrence, Bart., Author of "Jim the Penman" and other plays	48
	12. WERDER, General August Frederick William Von, one of the Principal German Commanders in the Franco-German War	79
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CLERGY MUTUAL ASSURANCE SOCIETY

(ESTABLISHED 1829),

2 & 3, THE SANCTUARY, WESTMINSTER, S.W.

OPEN TO THE CLERGY AND THEIR LAY RELATIVES.

NO AGENTS EMPLOYED AND NO COMMISSION PAID.

Trustees.

His Grace the ARCHBISHOP OF CANTERBURY. The Rt. Rev. the LORD BISHOP OF WINCHESTER.
The Very Rev the DEAN OF YORK.

Chairman—The Very Rev. the DEAN OF WESTMINSTER. *Dep.-Chairman*—The Hon. EDW. W. DOUGLAS.

Physician—Dr. STONE. *Actuary*—FRANK B. WYATT, Esq.

FINANCIAL INFORMATION, 1st JUNE, 1887.

Accumulated Funds	£3,349,535
Annual Income	£371,977
Total Amount Assured by 9,008 existing Life Assurances	£7,986,482
Profits divided at the Quinquennial Bonus, 1886 ..	£486,000

Upwards of £2,105,000 has now been divided amongst the Assured Members by way of Bonus.

THE SOCIETY OFFERS THE FOLLOWING ADVANTAGES:—

1. Absolute Security.
2. Economy of Management; no Agents being employed or Commission paid.
3. Low Rates of Premium and Liberal Surrender Values.
4. Claims Paid immediately on Proof of Title.
5. Freedom from Restriction as to Foreign Residence or Travel after Five Years' Assurance.
6. No Shareholders; all Profits being the Property of the Assured.
7. The Profit arising from the exceptionally low Rate of Mortality proved beyond doubt to prevail amongst the Clergy.

Annual Cost of an Assurance of £1,000 with Full Profits.

AGE.	£	s.	d.
25	20	1	8
30	23	8	4
35	26	10	0
40	31	1	8
45	36	3	4
50	43	13	4

Annual Cost of an Assurance of £1,000
Reduced Premium under Special Conditions

AGE.	£	s.	d.
25	16	1	8
30	18	10	10
35	21	4	2
40	24	17	6
45	28	19	2
50	34	19	2

Copies of the 58th Annual Report, Prospectuses, Forms of Proposal, &c., may be obtained on application to the Office,

2 & 3, THE SANCTUARY, WESTMINSTER, S.W.

MATTHEW HODGSON, *Secretary.*

THE GRESHAM LIFE ASSURANCE SOCIETY.

ESTABLISHED, 1848.

Head Offices—ST. MILDRED'S HOUSE, POULTRY, LONDON, E.C.

BRANCH OFFICES.

ENGLAND.

BIRMINGHAM, 18, Bennett's Hill.
BRADFORD, Bank Chambers, Bank Street.
BRIGHTON, 4, Pavilion Buildings.
BRISTOL, 1, Broad Quay.
LIVERPOOL, Gresham Buildings, 99, Dale Street.
MANCHESTER, 2, Cooper Street.
NEWCASTLE, 23, Collingwood Street.
NORWICH, Bank Plain.
NOTTINGHAM, St. John's Chambers, Bridlesmith Gate.
SHEFFIELD, Parade Chambers, High Street.
SUNDERLAND, 36, Fawcett Street.
STOCKTON-ON-TEES, Bank Chambers.

WALES.

CARDIFF, Gresham House, Roath.

SCOTLAND.

GLASGOW, 63, St. Vincent St. | ABERDEEN, 28, Market Street.
EDINBURGH, 73, George Street.

IRELAND.

DUBLIN, 5, Westmoreland Street. | BELFAST, 62, Royal Avenue | CORK, 85, South Mall

FUNDS.

Realised Assets (1886), £3,776,326. Life Assurance and Annuity Funds, £3,68[illegible],233.
Annual Income ... ... £742,328.

The Directors are prepared to receive from Local Boards and Corporations applications for Loans upon Rates.

The Society also grant Loans upon security of Freehold, Copyhold and Leasehold Property, Life Interests and Reversions.

Moderate Rates of Premium. Liberal Scale of Annuities.

Prospectus, Reports, and Proposal Forms can be obtained on application to the Society's Agents and Branch Offices, or to—

JOSEPH ALLEN, *Secretary.*

b

EAGLE INSURANCE COMPANY

(Established 1807)

FOR LIVES ONLY,

No. 79, PALL MALL, LONDON, S-W.

Directors.

Sir GEORGE RUSSELL, Bart. M.P. *Chairman.*
CHARLES BISCHOFF, Esq., *Deputy-Chairman.*

THOMAS ALLEN, Esq.
The Rt. Hon. Sir WM. HART DYKE, Bt., M.P.
The Rt. Hon. Sir JAMES FERGUSSON, Bart., M.P., G.C.S.I.
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C. A. LOCKHART ROBERTSON, M.D., F.R.C.P.
RALPH LUDLOW LOPES, Esq.
HENRY PAULL, Esq.
HENRY ROSE, Esq.
Colonel the Hon. W. P. TALBOT.

Actuary and Secretary.

GEORGE HUMPHREYS, Esq., M.A., F.I.A.

SUMS ASSURED and BONUS £7,385,942
TOTAL FUNDS £2,951,490
Being **40** *per cent. of the Sums Assured and Bonus.*
SUBSCRIBED CAPITAL £1,500,000
ANNUAL INCOME £332,017

During the past 39 years the Company has paid in Claims **£8,371,032**
And divided Bonuses amongst the Assured, exclusive of those taken in Reduction of Premium, amounting to **£1,110,391**

Interim Bonuses *are given on Policies of five years old and upwards, which become claims between any two valuations.*

PREMIUMS PAYABLE FOR AN INSURANCE OF £100.—With Participation in Profits.

Age Next Birthday.	For the Whole of Life.	Payable at Death or on attaining.			Limited number of Payments.		
		Age 60.	Age 55.	Age 50.	20 Annual Payments.	15 Annual Payments.	10 Annual Payments
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
20	2 1 7	2 10 9	2 16 4	3 4 7	3 6 1	4 1 10	5 11 4
25	2 5 7	2 18 0	3 5 10	3 17 10	3 9 3	4 5 6	5 17 4
30	2 10 8	3 7 9	3 19 4	4 18 1	3 14 4	4 10 8	6 4 3
35	2 17 1	4 1 7	4 19 10	6 12 1	3 19 8	4 16 9	6 12 2

THE SUM THAT £10 A YEAR WILL INSURE UNDER THE SEVERAL TABLES.

Age Next Birthday.	Payable at Death.	Payable at Death or on attaining.			Payable at Death.—The number of Premiums payable being limited.		
		Age 60.	Age 55.	Age 50.	20 Annual Payments.	15 Annual Payments.	10 Annual Payments.
	£	£	£	£	£	£	£
20	480	394	354	309	302	244	179
25	438	344	303	256	288	233	170
30	394	295	252	203	269	220	160
35	350	245	200	151	251	206	151

Special attention is called to the very favourable rates of Premium charged by this Company for "**Endowment Assurances,**" under which Class, the Sum Assured is payable on attaining a certain age, or at the previous death of the Assured, and which combine the principle of Investment with that of Life Assurance.

THE ECONOMIC
LIFE ASSURANCE SOCIETY,

No. 6, NEW BRIDGE STREET, BLACKFRIARS, LONDON, E.C.

ESTABLISHED 1823.

Directors.

HENRY BARNETT, Esq., *Chairman.*

The Right. Hon. E. PLEYDELL BOUVERIE, *Deputy-Chairman.*

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CHARLES ARTHUR BARCLAY, Esq.
MICHAEL BIDDULPH, Esq., M.P.
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ALFRED SARTORIS, Esq.
Sir AUGUSTUS KEPPEL STEPHENSON, K.C.B.
Rt. Hon. LORD SUDELEY.

Actuary.—RICHARD CHARLES FISHER, Esq.

ADVANTAGES OFFERED BY THE SOCIETY:—

The **lowest** rates of Premium on the **Mutual System,** for young and middle-aged lives, with early participation in Profits.

Number of Policies in Force	10,769
Sums Assured, with Bonus Additions	£9,426,117
Security—Accumulated Fund	£3,560,148
Annual Income	£370,580
Total Claims paid, with Bonus Additions	£8,137,678
Total Bonuses declared to 1883 inclusive	£4,153,415

Bonus.—The Society being on the **Mutual** principle, the Assured share the **whole of the Profits.** Policies effected before 31st December of each year receive a full year's Bonus for the year of entry.

QUINQUENNIAL DIVISION OF PROFITS, 1884.

Assets	£3,619,661
Liabilities...	3,050,831
Surplus	£568,830

Prospectuses, Statement of Accounts, and full particulars may be obtained on application to

JOHN RALPH GRIMES, *Secretary.*

EQUITABLE LIFE ASSURANCE SOCIETY,

OPPOSITE THE MANSION HOUSE, LONDON.

THE OLDEST LIFE OFFICE ON THE MUTUAL PRINCIPLE IN THE WORLD.

Founded A.D. 1762.

DIRECTORS.

President—SIR FREDERICK POLLOCK, BART.

Vice-Presidents—JAMES SPICER, ESQ.; JOHN ALLDIN MOORE, ESQ.

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GEORGE SCOVELL, ESQ.
RICHARD TWINING, ESQ.
JOHN WALTER, ESQ.
GEORGE FREDERICK WHITE, ESQ.

Medical Officer—WILLIAM MILLER ORD, M.D., F.R.C.P.

The Invested Capital of the EQUITABLE exceeds **FOUR MILLIONS AND A QUARTER,** being more than **thirty times** its Renewal-Premium Income.

It has never allowed Commission or employed Agents, whereby more than **TWO MILLIONS** have been saved to the Assured.

The whole Expenses of Management are about **2¼ per cent. on Annual Income.**

EXAMPLES FROM BONUS TABLE FOR 1888,

Showing the total Amount payable under a Policy for **£1 000** (including the Additions), in the event of its becoming a claim after payment of the premium due in the year **1888.**

Date of Policy.	Sum payable including additions.	
	£	s.
From 24th July 1817 to 16th April 1818	3755	0
,, 5th Feb. 1819 to 3rd Jan. 1820	3555	0
,, 23rd Dec. 1820 to 30th Nov. 1821	3355	0
,, 7th Mar. 1823 to 24th May 1824	3155	0
,, 9th Mar. 1825 to 3rd Nov. 1826	2980	0
,, 21st July 1828 to 1st Mar. 1830	2830	0
,, 24th Nov. 1831 to 1st Aug. 1833	2680	0
,, 19th June 1835 to 21st July 1837	2530	0
,, 24th Jan. 1839 to 10th Dec. 1840	2380	0
,, 12th Nov. 1842 to 18th June 1845	2250	0
,, 3rd Mar. 1847 to 14th Nov. 1848	2140	0
,, 19th Nov. 1850 to 26th July 1853	2030	0
,, 1st Jan. 1856 to 31st Dec. 1856	1920	0
,, 1st Jan. 1858 to 31st Dec. 1858	1810	0
,, 1st Jan. 1860 to 31st Dec. 1860	1717	10
,, 1st Jan. 1862 to 31st Dec. 1862	1642	10
,, 1st Jan. 1864 to 31st Dec. 1864	1567	10
,, 1st Jan. 1866 to 31st Dec. 1866	1492	10
,, 1st Jan. 1868 to 31st Dec. 1868	1417	10
,, 1st Jan. 1870 to 31st Dec. 1870	1360	0
,, 1st Jan. 1872 to 31st Dec. 1872	1320	0
,, 1st Jan. 1874 to 31st Dec. 1874	1280	0
,, 1st Jan. 1876 to 31st Dec. 1876	1200	0
,, 1st Jan. 1878 to 31st Dec. 1878	1120	0
,, 1st Jan. 1880 to 31st Dec. 1880	1060	0
,, 1st Jan. 1882 to 31st Dec. 1882	1020	0

The sum actually paid to its Members in Cash, as Bonuses on their Policies exceeds **Eighteen Millions.**

J. WARE STEPHENSON, *Actuary.*

GUARDIAN
Fire and Life Assurance Company.

Established 1821, *and Empowered by Special Acts of Parliament.*

Subscribed Capital	**£2,000,000**
Paid up Capital	**1,000,000**
Total Funds in hand	**3,999,000**
Total Income, over	**800,000**

Directors.

CHAIRMAN—BEAUMONT W. LUBBOCK, ESQ.

DEPUTY-CHAIRMAN—JOHN B. MARTIN, ESQ.

RIGHT HON. LORD ADDINGTON.
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Solicitors.—Messrs. WOODHOUSE, TROWER, FREELING & PARKIN, 5, New Square, Lincoln's Inn.

Head Office:—11, LOMBARD STREET, LONDON, E.C.

Manager of the Fire Department.—F. J. MARSDEN.
Actuary and Secretary.—T. G. C. BROWNE.
Bankers.—Messrs. MARTIN & Co., 68, Lombard Street.

Law Courts Branch:—21, FLEET STREET.

Branch Manager.—EDWARD H. SMITHETT.—*Bankers.*—Messrs. CHILD & Co., 1, Fleet St.

LIFE DEPARTMENT.

The last Quinquennial Valuation was made on the basis of the Institute of Actuaries' (H^M & H^{M5}) Tables of Mortality and 3 per cent. interest, the net premiums only being valued and the whole of the loading reserved. The sum of £175,228 was divided as a bonus among 5,052 participating policies assuring exclusive of existing bonus £4,321,144, the annual premiums payable under which amounted to £132,533 2*s.* 2*d.*

The exceptional Security offered by the paid up Capital of £1,000,000 has attracted a large amount of non-participating business to the Company, and the profit derived from it during the five years (1879–84) was more than sufficient to pay the sum of £40,000 which the Proprietors took as their share of the surplus, and which was the sole benefit which they received from the Life business in return for the guarantee afforded by the unusually large paid-up Capital of the Company. The Policy-holders in the "Guardian" have, therefore, the Security of a Proprietary Company with the Profits of a Mutual Society.

The full Bonus Report and Prospectus will be forwarded on application.

Life Fund (1886) - - £2,253,000 | Life Income - - - £288,000

FIRE DEPARTMENT.

Insurances effected on Property at Home and Abroad at Moderate Rates. Losses by Lightning are made good by the Company.

Fire Fund (1886) - - £591,000 | Fire Income - - - £469,000

HAND-IN-HAND

FIRE AND LIFE INSURANCE SOCIETY,

26, NEW BRIDGE STREET, BLACKFRIARS, LONDON, E.C.

Instituted in 1696.—*Extended to Life Insurance*, 1836.

DIRECTORS.

The Hon. LIONEL ASHLEY.	C. AUSTEN LEIGH, Esq.
T. PALMER CHAPMAN, Esq.	F. LOCKER-LAMPSON, Esq.
JOHN LETTSOM ELLIOT, Esq.	T. FULLER MAITLAND, Esq.
Admiral Sir L. G. HEATH, K.C.B.	ARTHUR SPERLING, Esq.
CHAS. R. GURNEY HOARE, Esq.	Rt. Hon. Lord THURLOW, F.R.S.
ANDREW JOHNSTON, Esq.	W. ESDAILE WINTER, Esq.

Bankers—Messrs. GOSLINGS & SHARPE, 19, Fleet Street.
Physician—THOMAS K. CHAMBERS, M.D.
Solicitors—Messrs. NICHOLL, MANISTY, & Co., 1, Howard Street, Strand.

AUDITORS.

Messrs. TURQUAND, YOUNGS & Co.
Secretary—BENJAMIN BLENKINSOP, Esq.
Actuary—JAMES TERRY, F.I.A.

The **oldest Insurance Office** in the World.

The **only Mutual Office** in the Kingdom for both **Fire and Life.**

There being **no Shareholders, all Profits** are **divided amongst** the **Insured.**

BONUS RETURNS.

LIFE—1st Series 75
2nd Series (according to the age of the Policy) ... 70 to 75 } per Cent.
3rd Series do. do. ... 50 rising to 60 } per Annum.
4th Series (the only one now open), after 1st Five Years, expected to commence at 45

FIRE (with certain exceptions)—Annual Policies 20 per cent. at the end of each 5th year. Septennial Policies, varying with the nature of the risk, 25 to 50 per cent. at the end of each 7th year.

No Policy Holder is subject to **any Personal Liability.**
The Directors are **willing to appoint as Agents persons of good position and character.**

VALUATION BALANCE SHEET, 31*st DECEMBER*, 1886.

ASSETS.

General Accumulated Fund, Fire and Life	£1,638,294
Life Assurance Fund, under Act of 1870	577,167
Present Value of Life Premiums	1,669,088
	£3,884,549

LIABILITIES.

Present Value of Sums Insured and Annuities, LIFE ...	£2,409,544
Sum Reserved for future Abatements on Premiums, LIFE	1,011,425
Sum Reserved for Bonus Returns on unexpired Policies, FIRE	24,811
Premiums in hand on account of unexpired terms of Insurance, FIRE	43,631
Balance of Assets unappropriated	395,138
	£3,884,549

The ACCOUNTS and STATEMENTS as deposited with the Board of Trade, as well as Prospectuses and Forms of Proposal, may be had of any of the Society's Agents, or on application at the Head Office.

BENJAMIN BLENKINSOP, *Secretary*.

THE LONDON ASSURANCE.

Incorporated by Royal Charter, A.D. 1720.

FOR FIRE, LIFE, AND MARINE ASSURANCES.

Head Office—No. 7, ROYAL EXCHANGE, LONDON.

Branch Offices { No. 43A, PALL MALL, LONDON. / „ 99, ST. VINCENT STREET, GLASGOW. / „ 14, EAST PARADE, LEEDS. / „ 5, FENWICK STREET, LIVERPOOL. / „ 16, CROSS STREET, MANCHESTER.

LEWIS ALEXANDER WALLACE, ESQ., *Governor.*
GEORGE WILLIAM CAMPBELL, ESQ., *Sub-Governor.*
DAVID PLENDERLEATH SELLAR, ESQ., *Deputy-Governor.*

DIRECTORS.

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OTTO AUGUST BENECKE, Esq.	HOWARD GILLIAT, Esq.	Capt. R. W. PELLY, R.N.
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I.	CAPITAL—Authorised Capital	£3,000,000	0	0
	Subscribed Capital	2,500,000	0	0
	Paid-up Capital	625,000	0	0
II.	FIRE FUND—Reserve	£1,250,000	0	0
	Premium Reserve	380,910	0	6
	Balance of Profit and Loss Account	107,997	6	0
		£1 738,907	6	6
III.	LIFE FUND—Accumulated Fund, Life Assurance Branch ...	£3,645,719	0	0
	,, ,, Annuity Branch	607,635	13	9
		£4,253,354	13	9
IV	REVENUE for the Year 1886—			
	From the Life Department: Net Life Premiums and Interest	£488,815	14	2
	Annuity Premiums and Interest ...	112,503	12	6
		£601,319	6	8
	From the Fire Department: Net Fire Premiums, Interest, &c.	£1,231,960	1	7
		£1,833,279	8	3

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1858	55	200	243	1871	38	31 0 0	9 12 9
1862	32	1,500	922	1872	54	54 10 10	26 5 7
1864	26	1,000	527	1874	47	41 7 6	11 6 6
1868	39	2,000	922	1875	71	455 4 7	334 19 4
1870	31	300	116	1876	60	314 12 6	111 6 6

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